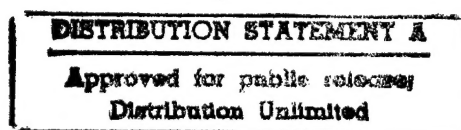085624

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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH, AND DEVELOPMENT

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WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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BBC RELAY STATION BEING BUILT ON CASTLE PEAK

Hong Kong SOUTH CHINA MORNING POST in English 10 Nov 86 Supplement p 8

[Text]

CIVIL engineering and building work at the relay station that will strengthen BBC radio reception in China has been completed by Leighton Contractors (Asia).

Work on the project has taken slightly more than one year.

The relay station will receive radio signals from London and transmit them to China.

The Chinese will be able to pick up the BBC's world service with a clearer reception than now.

The Tsang Tsui relay station near Castle Peak will take a signal transmitted by cable from a satellite-receiving dish in Stanley when handed over by Leighton.

The station will take another 11 months to complete; wiring, aerials, transmitters and control systems still have to be installed.

The $16 million main contract provided for the construction of a four-hectare site with roads, drainage, security fence and transmitter building with an extensive earthing system to screen the equipment and instruments from high frequency signals.

A second contract was later awarded to Leighton to construct an access road 2.1 km long leading to the relay station. The road contract is worth more than $4 million.

/9274
CSO: 5550/0044

NEW MOBILE TELEPHONE SYSTEM BREAKTHROUGH REPORTED

Hong Kong SOUTH CHINA SUNDAY MORNING POST in English 26 Oct 86 Supplement p 1

[Article by Vicky Wong]

[Text]

COMMUNICATION Services Ltd is writing off a $100 million investment in its mobile telephone network over the next few years in favour of a new system which will open up the borders with China.

The new network, estimated to cost the Hongkong Telephone subsidiary another $100 million to set up, is based on British Total Access Communication System (TACS) standards, and should become operational by January.

Agreements signed this month with the Guangdong and Shanghai authorities means that Hongkong subscribers to TACS will be able to use their mobile telephones legally to dial directly to more than 170 countries via IDD links.

At present, it is illegal for users subscribing to mobile telephone services provided by CSL, Hutchison Telephone or China Telecom to use their instruments to make calls while in China or Macau.

In future, however, Hongkong TACS subscribers will be able to make calls while in Guangzhou, Shanghai, and the whole Pearl River Delta area from hotel rooms, factory floors, or even from remote rural areas currently not served by conventional telephone lines.

In addition to normal telephone functions, the TACS network will also enable subscribers to use their mobile instruments for data transmissions to or from far away databases.

It is estimated that up to 3,000 TACS phones will also be used by Chinese across the border by the end of next year to bridge the gap between the need for better telecommunications for economic and other purposes and the limitations posed by the existing service.

With TACS, for instance, pay phones — whether operated by coins or credit cards — can be mounted in even the most remote areas without the need to build an expensive telephone line network.

According to CSL's Con Conway, subscribers to the new CSL service will also be able to use their mobile telephones in other countries which have TACS without the need for modifications to their instruments or time-consuming registration with the relevant local network operators.

Countries currently using TACS include the UK, Eire, Bahrain and Kuwait.

Negotiations are currently going on with the Beijing and Macau authorities to bring them into the TACS network on par with Guangdong and Shanghai.

In addition, a TACS system for India has now gone out to tender and Japan is also considering it for the country.

Other facilities available to TACS subscribers include radio paging, facsimile services, message banking and electronic mail.

Mr Conway said that the new TACS phones will cost from about $10,000 to $15,000 with a monthly subscription charge of $300.

The cost for making TACS calls from anywhere in the world is $1 a minute on top of normal IDD charges, with billing being automatically routed back to Hongkong to be integrated into subscribers' monthly bills.

Mr Conway said that TACS offers the most advanced features found in any competing network in the world.

In addition to the "roaming" facility which enables subscribers to make calls from any country in the world using TACS, the new system also enables equipment suppliers to dramatically reduce the dimensions and weight of their telephones to make them truly pocket-sized, Mr Conway said.

The new mobile phones can weigh as little as 24 ounces, and be as small as seven by three by one inch in size.

TACS phones use less power because the system allows for the instrument's transmitter (which consumes 90 per cent of the battery's output) to switch off when the user is not speaking.

Compared with currently available models which only allow for about 35 minutes of conversation before the batteries need recharging, TACS phones can double and perhaps even triple the length of conversation time.

Mr Conway acknowledged that when CSL decided to set up a mobile telephone system in Hongkong in 1981, the available technology then was not very advanced.

"But in the telecommunications industry much has happened in the last five years and CSL has decided to bite the bullet and go with another mobile network," he said.

However, CSL will maintain its current network, which is based on Japan's NAMTS standard, for the next five years in addition to TACS.

/9274
CSO: 5550/0041

BRIEFS

POLICE RADIO NETWORK--The Finance Committee yesterday approved $1.9 million to enable the Independent Commission Against Corruption and the Royal Hong Kong Police Force to further develop their microwave radio telecommunications network. The network, Phase IX of the project first introduced in 1979, will extend its coverage to the northern part of the New Territories. Explaining the background to the fiscal request, the Government said: "With the rapid and continuous growth in population in the New Territories, the number of operations by various users of the microwave radio network has increased considerably. "Experience now shows that telecommunications in the northern part of the New Territories are inadequate to meet increased operational requirements. "It is therefore proposed to install, as Phase IX of the system, one 60-channel microwave link and two 24-channel microwave links." The capital cost of Phase IX is estimated to be $1.9 million and the recurrent cost of spare parts and maintenance is estimated to be $170,000 each year, the Finance Committee was told. Further phases to extend the system coverage in the New Territories to include Clearwater Bay and the southern part of Lantau Island and to provide additional channels in areas of high utilisation on the north side of Hongkong Island and urban Kowloon are being considered. [Text] [Hong Kong HONGKONG STANDARD in English 13 Nov 86 p 8] /9274

CSO: 5550/0045

WORLD TELECOM GIANTS SAID TO COMPETE FOR PRC MARKET

Hong Kong SOUTH CHINA MORNING POST in English 6 Nov 86 Supplement p 3

[Article by Mark O'Neill]

[Text]

BEIJING: Telecommunications giants from around the world are vying for a piece of the huge China market where on average one telephone must be shared between more than 150 people.

Nearly 300 firms from 17 countries last month displayed a dazzling array of radio and telephone equipment at a Beijing exhibition, lured by China's promise to spend US$1 billion on imports over the next two years to bring its telephone system out of the 19th century.

China's one billion people have only six million phones, one of the lowest ratios in the world.

Few outside the top leadership have a private telephone.

City dwellers have to queue up to use either a public phone or one in their office and there are even fewer telephones in villages where 80 per cent of the population live.

Under the leadership of Deng Xiaoping the government has declared telecommunications a priority for investment over the next five years, saying that without them, modernisation is impossible.

Telephone manners have improved greatly from the days when the person answering refused to give his name or office until the caller identified himself and who he was calling.

"China wants to quickly become a developed nation," said Angus Dawes, export manager of a subsidiary of Philips of Holland, a participant at the Beijing exhibition.

"It does not have the time to train and develop the management skills needed for the telecommunications industry quickly. So it has to go for imports," he said.

Several foreign firms have already won contracts to supply telephone exchanges to China.

Ericsson of Sweden said earlier this year it had won a $17 million contract to deliver six digital telephone exchanges to four cities.

Siemens of West Germany said in a statement issued at the exhibition that it had received orders to supply 11 digital exchanges, of which three are currently being installed.

Alcatel of France has sold 100,000 line switches to Beijing, 28,000 of which are in operation, and Fujitsu of Japan will sell toll switches and transmission systems to China.

Italtel of Italy and a Belgian affiliate of the US firm ITT have both won contracts for joint production within China of telephone equipment.

The purchasing power of many Middle East and Southeast Asian countries has fallen following a sharp drop in commodity and oil on which their economies depend.

So China, which is less dependent on commodity exports, has become more attractive to foreign firms.

But it remains a tough market to crack because of the competition and tight controls on foreign exchange since the middle of last year.

From January last year to September this year, China had a trade deficit of $23 billion.

"The foreign exchange shortage means selling to China now is harder than a year ago," said Robin Maule, international director of distribution for Motorola Asia, which has sold a mobile telephone system to Beijing.

"China is putting more emphasis on cheap financing and barter trade. So we are looking at China as a source of components as well as a market. But the quality of goods made here is not yet of world standard," he said.

Beijing wants foreign firms to do part or all of their manufacturing within China, rather than make large import purchases.

To encourage them, China announced last month that it was preparing a law to protect advanced foreign and domestic software in the electronics field.

But many foreign companies remain nervous about joint production.

"China is trying hard to create a better environment for investment," Mr Maule said.

"But regulations in many areas, like copyright, taxation and repatriation, are unclear or not formulated at all," he said.

"We need to do more investigation before we would set up a joint venture."

All this state investment is good news for patient Chinese who have been waiting years for a telephone.

A rich area in Guangdong province became the first rural county in China to get automatic phones in December.   —Reuter.

/9274
CSO: 5550/0043

ELECTRONICS INDUSTRY MINISTRY PLANS 5-YEAR GROWTH

Hong Kong SOUTH CHINA MORNING POST in English 4 Nov 86 p 7

[Article by Cheng Gentao]

[Text]

CHINA'S electronics industry should grow at 16 per cent a year over the next five years, according to a development plan from the country's Ministry of Electronics Industry.

The electronics industry in China is a beneficiary of the country's modernisation drive which started in 1979 and has been given great emphasis by Chinese decision-makers and economic planners.

The current growth may give them some measure of satisfaction, but the wide gap between China and developed countries in electronics can in no way reduce their sense of urgency.

Computers have started to raise efficiency in an increasing number of enterprises, while Chinese homes are being modernised with electronic consumer goods.

According to official statistics, China's electronics industry developed at an annual rate of 22.8 per cent between 1981 and 1985. During the period the industry produced 1,500 main frame computers and 65,000 micro-computers. In 1985 alone some 30,000 micro-computers were produced.

There was also considerable growth in the production of marine communication equipment, broadcasting transmitters, telephone switchboards and micro-wave, satellite and telex equipment.

Meanwhile, a huge domestic demand for electronic consumer goods has spurred production. Radio and television output has grown at 32.8 per cent a year over the last five years.

In 1985, Chinese factories turned out 10.7 million radio-cassette recorders and 14.3 million televisions including 3.6 million colour sets.

The quality of products has also improved. According to a report by the Computer Bureau under the Ministry of Electronics Industry, trouble-free time for main frame computers has reached 3,900 hours impressing users.

Trouble-free time for black-and-white televisions now ranges between 5,000 and 10,000 hours, while reliability of colour sets has always been above 15,000 hours.

Summarising progress in the computer field, an executive at the Computer Bureau, Mr Zhang Baishun, said:

"First, we have basically established a computer manufacturing industry. Production of micro-computers, for example, reached more than 30,000 in 1985.

"Secondly, we have established a technology service network. This comprises four national corporations, which undertake computer system engineering, software development, technological service and main frame installation.

"Thirdly, research results outnumber those in any other period since the founding of new China.

"And computer application has got a real start."

Research has moved ahead of production. According to Mr Zhang Qiang, an official at the Information Office of the Electronics Industry Ministry, the past five years have seen more research than in the past.

Some examples are:

● A "Galaxy" super computer capable of 100 million calculations per second, and a "Galaxy" digital computer for simulation, both developed by the University of National Defence Science and Technology in Changsha.

● A photo-composition system for Chinese characters. Using computer and laser technology, the model features automatic alignment, pagination, margin positioning and text editing.

● Thirty-two bit super mini-computers and array processors, which are being manufactured in small numbers.

● Models of 16-bit micro-computers, which have begun mass production.

● A high-speed static memory, containing more than 100,000 transistors.

● A microwave network automatic analyser.

● Coding systems to computerise Chinese characters.

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Progress also is indicated by:

- Computer application extending from numerical computation to non-numerical computation.
- China-made computers being used in the launching, measuring and controlling of long-distance carrier rockets and China's numerous satellites, including two communication satellites.
- Prices of domestic-made computers coming down 50 per cent in the past three years.

"China is fairly strong when judged on the performance of limited computer models we have developed. Our weakness is that we have difficulty in mass production, and in providing enough support equipment," said Mr Zhang.

Am example of success is a 16-bit micro-computer — the Great Wall 0520-C — developed by the Computer System Engineering Research Institute in Beijing, which gained wide attention at the Comdex-Fall '85 computer exhibition in the United States.

Some 400 company representatives attending the show expressed interest in co-operating with the Chinese developer. Five factories in China are producing the model, which is compatible with IBM personal computers.

"We are not behind in micro-computers compared with the level outside China, but we are weak in mini-computers and main frames," said the director of operations of the Beijing institution, Mr Huang Xiaoming.

The progress so far owes much to China's strategy for development of its electronics industry: independent efforts coupled with assimilation of foreign high technology.

The Vice-Premier. Mr Li Peng, who heads a commission directing the overall development of China's electronics industry, characterised the strategy as "importing, digesting, developing and blazing new trails".

According to incomplete statistics, China's electronics enterprises since 1979 have imported 1,135 items of technology, involving US$1.37 billion (about HK$10.6 billion).

They include production lines for a French computer model, linear integrated circuits, magnetic disk drives, chromium plates, crucial parts for colour televisions — picture tubes, high-frequency heads, deflection coils and line output transformers — and parts for cassette recorders.

Twenty-two big projects involving imported technology have been completed, adding much to production capacity and technological upgrading.

Foreign investment is working. In Shenzhen, China's first special economic zone set up to attract foreign investment, the last few years have seen 170 electronics factories built, their output value now accounting for more than half of the zone's total.

However progress is judged on China's former conditions in the electronics field.

The overall level is still low, according to people interviewed. China can make some types of large-scale integrated circuits but has difficulty in mass production at a low cost.

While it manufactures fairly advanced micro-computers, it is weak in mini-computers and main frames. The components for black-and-white television sets are self-sufficient, but a large percentage of parts for colour sets are imported.

In recent years, computer application has been regarded as having a pivotal role in the development of China's computer industry.

"Providing active technical service to facilitate application is the key link in expanding our domestic computer market," said the Minister of Electronics Industry, Mr Li Tieying.

According to incomplete statistics, about 15,000 computer systems are in use in enterprises across the country. "

Beijing's Computer System Engineering Research Institute under the Ministry of Electronics Industry now undertakes 40 to 50 medium-sized and big application projects every year.

Successful projects undertaken in the past few years included monitoring and control systems for 200,000 kilowatt generating sets, oil refineries, paper mills, hotels and large electric power grids.

"Unlike in the past when we had to convince users about the advantages of using computers, we now have more orders than we can cope with," said Mr Huang.

He said his institute's systems are reliable and suited to Chinese conditions.

"Our control system for the generating set at Hebei province's Douhe power plant, for example, has been operating perfectly for a year.

"Our price is about one third of a similar imported system. We shall do another 10 projects of this kind in the next two years."

Mr Huang said some of their systems had reached international levels.

"We plan to contract projects outside China in the next few years," he said.

In Beijing, a plan calls for computerising the management of all the city's 80 tourist hotels over the next two years. This follows the successful running of a domestically designed system at the new Xiyuan Hotel.

"New hotels without computerised management will be barred from business," said the city's mayor, Mr Chen Xitong.

In Shanghai, a survey of 127 big enterprises at the end of 1985 showed that management and production in 87 per cent of them has been aided by computers.

Another field of application is the computerisation of existing machine tools. According to incomplete statistics, more than 1,300 old machine tools nation-wide are now aided by micro-computers.

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CSO: 5550/0042

SATELLITE TV GROUND STATION PASSES STATE TESTS

OW132339 Beijing XINHUA Domestic Service in Chinese 0124 GMT 12 Nov 86

[Text] Chongqing, 12 Nov (XINHUA)--(Reporter Wang Shijin) The WDJ6-1 Satellite Television Ground Receiving Station developed and produced by Chongqing Bashan instrument plant under the Ministry of Astronautics Industry passed ministry-level assessment tests in May this year and obtained state certification in Chongqing on 6 November.

This satellite television ground receiving station will enable people in remote areas to view three sets [san tao 0005 1152] of domestic and international satellite television programs. The operation of 18 stations which have been completed and put into use shows that satellite television programs received through this station have sharp pictures, natural colors, and good audio reception. All technical targets and quality requirements conform to the standards stipulated by the state.

The antenna feed sources [Kuiyuan 7432 3293], the major structure of this satellite television ground receiving station, are all made in China. They can withstand high temperatures and bitter cold, and the supporting structures are solid. In May this year, some counties in Chongqing were hit by strong grade 10 winds and by hailstorms. Houses collapsed, trees were uprooted, but the satellite television receiving stations in these areas operated as usual with good results.

/9599
CSO: 5500/4136

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CHINA TO CONSTRUCT PACKET-SWITCHED DATA COMMUNICATIONS NETWORK

Beijing DIANXIN JISHU [TELECOMMUNICATIONS TECHNOLOGY] in Chinese No 9, 10 Oct 85 pp 2-4

[Article by Gao Xingzhong [7559 2502 1813]: "China Will Soon Build Packet-Switched Public Data Communications Network"]

[Text] The first stage of China's packet-switched public data network will include three node exchanges in large cities, remote concentrators at several locations, and a network management center and international traffic office at Beijing; it is expected to be completed in 1986. The network architecture is shown in Fig. 1.

1. An Overview

Data communication networks may be either public or private. In the 1960's many countries concentrated on developing private networks, but by the early 1970's public data networks began to be developed alongside the private networks. The public networks generally used circuit switching or packet switching. The principle of circuit switching is similar to that used in a conventional telephone system: at the caller's request one or several network exchanges establish a data channel between the caller and the called terminal (or computer) for their exclusive use, carry out data transmission, and clear the channel when the transmission is completed. The advantage of this switching method is its effectiveness in real-time transmission. But for large amounts of conversational data communications the data channel utilization rate is rather low; an additional serious problem is that users operating at different speeds, with different codes or different types of transmission cannot communicate with each other. In the 1970's there was continuous competition between circuit switching and packet switching in public data transmission, and many countries established both types of networks simultaneously, but starting in the early 1980's most countries accorded priority to packet switching when setting up public data networks and held circuit switching at a fixed level.

2. The Principles of Packet Switching

Packet switching is a new switching method that developed from the traditional store-and-forward telegraphic switching method. Its basic principle is as follows. The data message that the subscriber wishes to transmit is broken down into a series of segments, each of which is transmitted, along with necessary service information such as the source and destination addresses, packet number, error control information and the like, to the network exchange (generally called a node) with which the subscriber is connected. This text segment and appended service information form a data block, generally called a packet. When the exchange to which the sender is connected receives the packet, it determines the optimum route to the exchange with which the addressee is connected (it may happen that the sender and addressee are connected to the same exchange) and forwards the packet to another switching exchange, from which it is ultimately sent to the exchange to which the destination is connected. This exchange sends the packet to the destination subscriber, who extracts the message segments from the packets and assembles them into the complete message. The above description naturally gives only the basic principle; the switching techniques used in real packet switching networks are of course much more complicated.

A packet switching network includes several packet switching exchanges (PSX), also called nodes, that use high-speed trunk lines. The subscriber terminal is connected by an access line to a nearby PSX. Any intelligent terminal that transmits packet-type information is called packet data terminal equipment (P-DTE). It is generally synchronous, using a four-wire dedicated access line operating at speeds of 2,400, 4,800, 9,600 or 48,000 bps [bits per second]. Another type of terminal is the character data terminal equipment (C-DTE), which is generally asynchronous and uses dedicated (two-wire or four-wire) access lines or has access via a public telephone system or a Telex network (both using two-wire lines) operating at speeds of 50, 75, 100, 110, 150, 200, 200 and 1,200 bps; the C-DTE also can be connected via a 1200/75-bps public telephone system to dialed Videotex. Fig. 2 illustrates packet transmission over a network by various types of terminals.

In accordance with the Open System Interconnection (OSI) reference model of the International Standards Organization (ISO) and the X25 packet-switching protocol of CCITT [Consultative Committee on International Telephone and Telegraph], this network provides the protocols for only the bottom three layers, namely the physical layer, link layer and network layer, and not for the top four layers (i.e. the transport layer, session layer, presentation layer and application layer). Fig. 3 illustrates the relationship of a virtual circuit between two packet terminals to the interfaces at the various levels.

The physical level (bit-level interface) is further specified by the CCITT X21 protocol. It assures that data bits are sent at a particular speed and specifies the mechanical and electrical characteristics of the data terminal equipment/data circuit equipment (DTE/DCE) interface.

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The frame level (link level interface) is specified by the Link Access Protocol (Balanced) or LAPB, part of Protocol X25. Its functions are to initiate, maintain and terminate links, to determine frame boundaries, to perform error detection and correction, and to maintain frame sequence.

At the packet level, the user data is formed into packets in accordance with the packet level protocols. Before the data is sent, a permanent or temporary virtual circuit is established between the communicating terminals. Its functions are: multiplexing, virtual call establishment and clearing, provision of service procedures for the network, transmission of user data via a virtual call or a permanent virtual circuit, and flow control.

3. Advantages and Deficiencies

a. Increased Line Utilization Rates

The user data is transmitted as a series of discontinuous packets along a data channel between exchanges in the network. When the user is not sending data, he is not occupying the data channel between exchanges, and during this period data packets can be transmitted for other users, thus greatly increasing the line utilization rate.

b. Communication Between Terminals Using Different Speeds, Codes and Protocols

Packets are transmitted between exchanges by the store-and-forward method. The exchanges therefore can subject them to whatever processing is required, such as speed conversion, code conversion and protocol conversion, thus allowing communications between terminals using different speeds, codes and protocols.

c. High-Quality Service

Because the packets provide for error detection and retransmission, high-quality transmission with low error rates is achieved.

d. Low-Cost Data Switching Service

In many countries the rates for packet switching are independent of distance and are calculated only in terms of how long the line is occupied and the service volume, resulting in charges that are generally more favorable than those for circuit-switched systems and leased dedicated lines.

Naturally, packet switching also has deficiencies: it is not particularly economical for large-batch data transmission that monopolizes service for long periods; the maintenance technology required is rather complex; and the node exchanges are rather expensive.
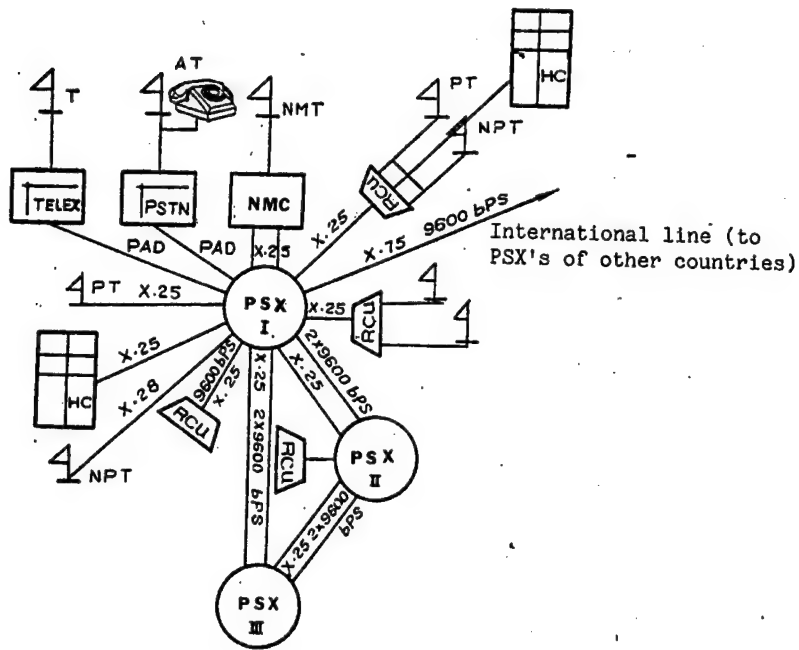
Fig. 1.   RCU: remote concentrator unit;   PAD: packet assembly and disassembly;   T: Telex terminal;   AT: asynchronous telephone terminal; PT: packet data terminal;   NPT: non-packet data terminal;   HC: host computer;   X.25, X.28, X.75:   CCITT protocols;   NMT: network management terminal;   PSX: packet switching exchange;   NMC: network management center
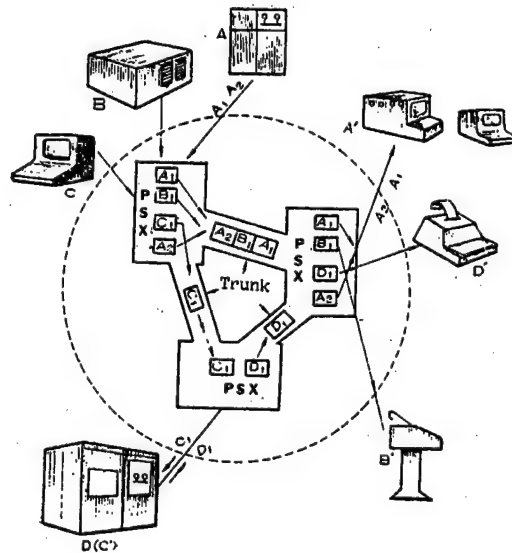
Fig. 2. X_n indicates packets flowing from X and to X'; PSX, packet switching exchange

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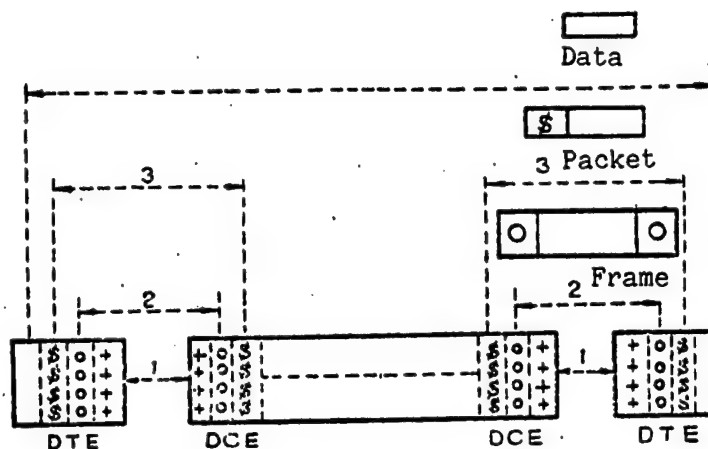
Fig. 3.

1. ++++, physical layer; 2. oooo, frame layer; 3. $$$$, packet layer;
DTE: data terminal equipment; DCE: data circuit equipment

4. Network Requirements

Packet-switching exchanges must accommodate a rather wide range of data
transmission speeds and service types and must provide network management
services suited to a variety of protocol interfaces and user capabilities,
which are highly flexible, inexpensive, and of the kind required by public
data networks. Their characteristics are as follows.

a. The basic organization must be a multiple-microcomputer hardware
architecture; the software must be modular, and communications capabilities,
operations and control must be decentralized and use distributed processing.

b. Asynchronous character terminal interfaces (compatible with ordinary
teletypewriter units) use CCITT protocols X28, X3 and X29.

c. Synchronous packet terminals (including data terminals and computers) use
the X25 protocol.

d. IBM 3270 and 2780/3780 protocols must be supported.

e. The X75 protocol for international traffic or interfacing with other
networks must be supported.

f. 50-baud Telex users, 300-1200 bps public switched telephone network (PSTN)
users (the new X32 protocol issued in 1984 allows expansion to 2400/4800 bps),
and dedicated line users can access the network at speeds of 300-1200 bps
asynchronous and 2400-9600 bps to 48 kbps synchronous.

5. Main Technical Characteristics

The requirements for the main technical characteristics of packet switching networks are as follows.

a. Average virtual circuit establishment time during busy periods less than 1 second.

b. Network packet transmission delay less than 150 milliseconds.

c. Network availability at least 99.9 percent.

d. Packet error rate in trunk transmissions $1 \cdot 10^{-8}$.

e. Packet switching exchange capacity at least 500 packets per second.

f. Packet switching exchange call handling ability at least 8 per second.

g. Virtual circuit mean time between failures (MTBF) at least 80 hours.

6. Network Management and Numbering Scheme

The network management center for China's public packet-switched data network will consist of two minicomputers (one main computer and one backup) connected to the Beijing node. Their main elements will be a central processor unit (CPU), main memory, a multiplexed peripheral controller, and large-capacity magnetic disk and tape units. Their main functions will be network management (control of all nodes), subscriber management (a data base consisting of subscriber data, i.e., prototol interface, speed and all subscriber service functions), supervisory management (detailed monitoring of network service volume, service quality and node utilization rate), and billing information. The network management center can perform remote loading of software into the nodes, process alarms and malfunctions, perform remote addition to, updating and deletion of the nodes' software and office data, and use a network management terminal (which can be installed at any other location) for testing of subscriber lines and network links.

In accordance with CCITT recommendation X21, China's public data network has the number 460, and the maximum length of a number in the network is 15 bits. Because China's network will integrate international and domestic functions, the numbering scheme must meet requirements for at least 20 years, maintain relative stability of user numbers and regularity of numbering, and make thorough use of available numbers. These requirements can be satisfied by the following scheme:

X_1	International communications prefix
X_2-X_4	National or local code number
X_5	Internal network number
X_6-X_8	Node number

$$X_9-X_{12}$$ User terminal number

$$X_{13}-X_{14}$$ User subaddress number

$$X_{15}$$ Extra

One possible name for China's network is CNPAC, with the number 4601.

In international calls, when communicating with a private -line user in the data network of the called country, the dialing sequence includes the international prefix 0, the country's data network identification code (DNIC, 4 digits), and the network terminal number (NTN). If the communication is with a user on the public telephone network (PSTN) of the called country, the dialed number consists of prefix 0 + 9 + DNIC + subscriber telephone number. If the communication is with a Telex terminal in the called country, the dialing sequence consists of prefix 0 + 8 + the Telex network number in the called country and the subscriber's Telex number.

In domestic communications calls, the node number X_6-X_8 plus the subscriber terminal number X_9-X_{12} can be dialed directly; if the subscriber has several subaddresses, the subaddress code $X_{13}-X_{14}$ can be added. The calls will be forwarded to the subaddresses by the subscriber's intelligent terminal or computer. In communicating with a domestic telephone system subscriber, the special service code 1XX can be used to enter the packet switching network (or a subscriber connection number may be used). For the time being it will not be possible for packet network users to call public telephone subscribers. If this feature is implemented in the future, the sequence 1XY plus the domestic telephone number will be used. In communication with a domestic Telex network subscriber, the sequence will be 1WZ plus the domestic Telex number (or a Telex connection number may be used).

7. Billing

Billing information is first stored on 8-megabyte Winchester hard disks at the nodes, then transferred to the network management center, where it is recorded on magnetic tape. An off-line computer center calculates the details of subscriber bills and international fees and performs various statistical analyses. Billing for packet-switched data communications and services generally includes three components, described below.

a. Access Fees

This term applies to dedicated-line or switched-line (PSTN and Telex) service. The access fee includes initial installation fees, a monthly access fee, the rent for modems and other equipment, and special service fees, including the directory fee and monthly fees for services such as network subscriber

identification, closed subscriber group, fast selection, called-party surcharge, direct calls, permanent virtual circuit and the like.

b. Data Volume Fee

In accordance with CCITT recommendation D11, the service volume is generally calculated in terms of segments; each segment includes 64 8-bit octets regardless of the maximum packet length. The packet length is generally 128 octets.

Some countries use different rates for busy and slack periods; two or three time periods may be differentiated in billing.

c. Time Charges

These are calculated in minutes. Some countries offer favorable rates for slack periods.

The above are domestic billing methods. International communications differs in some respects; the billing method is established by mutual agreement and the billing unit is usually 1,000 characters. Because of time differences, favorable rates are not offered for slack periods in international communications.

Billing for packet switching generally is independent of distance and there are no priority levels.

8480
CSO: 5500/4135

TELEPHONE EXCHANGE MODERNIZATION DISCUSSED

Beijing DIANXIN JISHU [TELECOMMUNICATION TECHNOLOGY] in Chinese No 5, 10 May 86 pp 7-9

[Article by Luo Pi [5012 0012], Switching Department, Bureau of Telecommunications, Ministry of Posts and Telecommunications]

[Text] The wiring system in a telephone exchange area's subscriber line network is a very important problem. Because the subscriber line network takes up approximately one-third of the capital assets of an exchange's facilities; as the telephone exchange area's transmission medium, it connects tens of thousands of homes, not only directly affecting the quality of city telephone communications, but also influencing the efficiency of the operation and maintenance of the telephone exchange area. Generally, with reference to a construction project for a telephone exchange of a certain capacity, the switch and various other items of equipment are basically fixed, whereas the quality of the circuit engineering design can affect one-fifth to one-fourth of capital investment for lines. In the case of of a network of insufficient throughput capacity, to install equipment after the line utilization ratio has reached 60 percent would require extensive circuit engineering, a workload which could reach more than 10 working days (per department). Therefore we must place emphasis on this problem.

I. Basic Requirements of a Telephone Exchange Area Network's Wiring System.

A. Economy. After a subscriber line network has been selected, it should provide relatively high economic benefit. That is, during a certain period, under the premise of meeting subscriber requirements, capital expenditures for construction should be kept as low as practicable, and economies should be achieved in expansion, maintenance, and other expenses.

B. Throughput. Under the conditions of a certain utilization ratio, the wire network should have a relatively high degree of responsiveness to changes among subscribers.

C. Stability. Once wire line facilities have been constructed, frequent disconnects, changes, and modifications will be unnecessary. Switching area boundaries, exchange areas, wire line facilities etc. should have corresponding "stability." This aspect was raised as the result of lessons

learned from the "snap changes" back and forth of earlier line networks which wasted a large amount of manpower and material without providing the abilility to respond to telephone exchange area requirements for rapid expansion. Another aspect involved consideration of the development of modern switching technology and transmission technology, which made it possible to ensure the stability of the telephone exchange line network. For example, the application of remote modules and digital multiplexing technology can solve the problem of uneven subscriber expansion without having to change exchange areas nor make major circuitry changes. If free cable distribution is adopted as the cable plant ultimately becomes fully plastic-insulated cable, then no further circuit engineering will be required. Suitable application of this technology and equipment should enable us to fulfill subscriber demand at relatively low cost. The complementary stability of the exchange and switching area will facilitate considering them an operational entity to accumulate subscriber information over a long period, furnishing a reliable basis for development of the local telephone exchange area network.

D. Maintainability. This refers to ease of maintenance, low instrument installation and movement workload, ease of use, and low maintenance cost.

The above four items are mutually supportive. Among them the economical furnishing of high quality telephone service is our objective; throughput capacity, stability, and maintainability ensure economy; and without throughput capacity there cannot be good stability and maintainability. Besides, a cable network with poor maintainability also loses the basis for the existence of stability. These fundamental requirements should consititute our overall guiding concept in the direction of the installation, expansion, utilization, and maintenance of a local telephone exchange subscriber line network.

II. The Development of China's Cable Distribution System.

A. The Cable Distribution System During the Early Period of National Development.

During this period China's local telephone exchange subscriber line networks adopted the following three types of cable distribution systems. These three systems may also be termed collectively as direct distribution.

1. Direct Distribution. The characteristic of this mode of distribution is that each set of contacts in the distribution equipment corresponded directly with a cable pair. Basically no multiple connections were made between distribution equipment. The advantage of this mode is that the structure of the cable network is simple, with neither troubles nor losses resulting from multiple connections. The disadvantage is that flexibility is lacking.

2. Group Distribution. There is a fixed group distribution pattern between the terminal facilities used with this mode of cable distribution, or group distribution is carried out with a portion of the cable pairs between the various branch cables. In some cases a large multipair backbone cable would even be spliced from the main cable to facilitate adjustment of the distribution pattern among the various branch cables. Group distribution

among terminal facilities is further divided into two modes: the single group distribution on the basis of fixed group distribution pairs and the flexible group distribution without assigned pairs for group distribution.

The advantage of group distribution is that the network has a definite flexibility which facilitates increased circuit utilization. The disadvantage is that group distribution increases the complexity of the network and produces group distribution attenuation, and the probability of distribution troubles increases at the same time.

3. Supplementary Distribution. This type of cable distribution involves the installation of high-capacity distribution facilities at suitable points in the network to serve as supplementary distribution boxes, taking a certain number of terminations from the remaining distribution facilities and connecting them to the supplementary distribution box by means of unused conductors in the cable. In this way, unused cable pairs may be connected at will to a distribution facility by means of the supplementary distribution boxes.

The advantage of supplementary distribution is that it imparts great flexibility to the cable distribution area without group distribution attenuation. The disadvantage is that the network is relatively complex and that expansion and modification are comparatively difficult.

B. The Utilization of Switched Distribution.

In China in the 1950's, switched distribution was promoted in local telephone construction projects undertaken by Postal and Telecommunications design centers. This had a very positive effect on increasing the throughput capacity of backbone cables, and also caused many local telephone exchanges, through familiarity with switched distribution concepts gained in over 20 years of operations, to accumulate a rich store of utilization and maintenance experience. Yet there remained several deficiencies in that period's efforts in promoting switched distribution.

1. After adoption of switched distribution, because management activity did not keep pace, branch and suboffice distribution records did not agree with actual conditions, leading later to maintenance difficulties.

2. Inadequacies existed in the switched distribution method of that time, from design concept for example, it was only considered that switching boxes could increase the circuit utilization index, and the cable distribution area was not considered as an operational unit. At the same time, during design more concern was devoted to short-term construction funding savings than to facilitating future expansion, causing the adoption of rapidly stepped reduction from main to distribution cable. This made it difficult to maintain the stability of the cable wiring network.

3.   Terminals in the switching boxes of that time were exposed to the air making it easy for troubles and poor insulation conditions to occur.

Because of the problems described above, switched distribution could not be promoted on a broad scale. The current situation in China's local exchange subscriber wiring network is still one in which direct connection, group distribution, supplemental distribution, and switched distribution systems exist side-by-side, lacking in economy, flexibility, stability, and maintainability. When the utilization ratio in many offices is barely 50-60 percent, an overall tight situation develops with reference to meeting requirements. These conditions tell us that the current distribution modes are not responsive to the current explosive development in local telephone service and there is the need for reform.

III. The Development of Modern Distribution Systems.

A.   The use of fully plastic-insulated cable and new types of switching boxes has promoted the development of switching distribution.

In recent years there has been increasingly widespread application of all-color-coded fully plastic-insulated cable and new types of continuous modular switching boxes as well as contactless switching boxes. At the same time the various types of connectors developed to solve the problem of connecting fully plastic-insulated cable have not only been easy to operate with high reliability but also isolate cable conductor connecting points from air contact. Thus troubles arising from the old type of contacts in switching boxes have been avoided.

Besides, new developments have taken place in the understanding of the capabilities and operation of distribution boxes. To sum up, there are the following key points:

1. Taking a switching area encompassing about 600 main trunk pairs on a long-term basis as a stable operational unit, subscriber information may be accumulated on a long-term basis to carry out subscriber forecasting. This would provide a reliable basis for network planning and construction.

2. Switching boxes divide subscriber line networks into main trunk cables and distribution cables, with distribution cables within switching areas becoming corresponding small independent networks. This lets main cables and distribution cables be expanded and constructed separately without leading to a situation in which a minor change can affect the entire system. The level of detail in subscriber forecasts may be reduced. At the same time, with the large capacity of the main cables, the annual growth capacity on each route will also be greater; while the annual growth capacity of the distribution cables and each route will be smaller; adoption of switching can lead to main cables and distribution cables having separate considerations regarding the reaching their set numbers of years (such as 5 years for main cables and 10 years for distribution cables); significantly improving the economic benefit of the cable line network.

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3. Switching boxes have expanded the utilization rate of main cable conductors. Then the addition of loop switching and group distribution measures permits mutual support among 1-3 exchange areas. Such cable networks have extremely high throughput. Actual statistics show that switching distribution can improve the utilization rate by 15-20 per cent as compared with direct distribution of main cable pairs.

4. Avoid group distribution troubles and loss.

5. Testing of a portion of the lines as well as performing cable distribution pattern adjustment work at the switching box can greatly reduce the work load at the main distribution frame. This is very beneficial to large exchanges.

B. The Utilization of Fully Plastic-insulated Cable Spurred the Development of Free Distribution.

As a result of the good moisture-proofing of the insulation of the conductors within all-color-coded fully plastic-insulated cable, "free distribution" could be adopted on distribution cables (See Figure 1). It is performed as follows:

1. Specially made distribution boxes may be installed at any point on the cable route (branch points, reduction points, connecting points, and through cables.

2. Cables pass directly through distribution boxes with no need for droplines nor for air plugs.

3. The protective jacket of the cable may be stripped within the distribution box, exposing all cable conductors in the distribution box. One terminal of the terminal boards installed in the distribution box is connected to the lower (outgoing) line, while the other is connected with a pre-installed lead which may be connected by means of a connecter to any cable pair. Generally, when connecting leads and cable pairs we try to use the distribution box to break the distant conductors to preclude multiple connections.
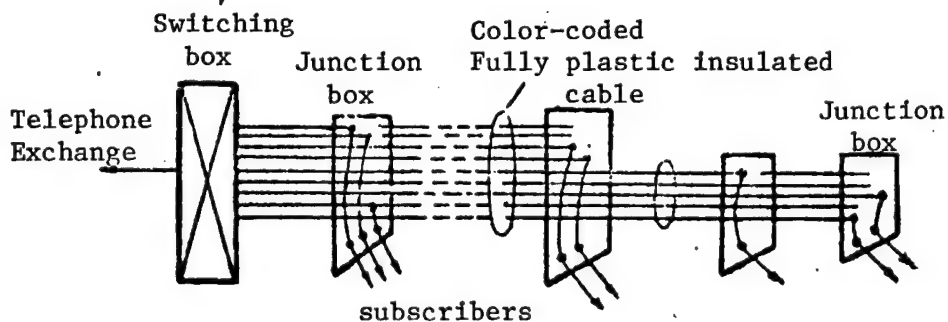
Figure 1.

From the above points it can be seen that: All conductors in a cable are already in a distribution box, with no need for cable pair allocation nor distribution box cable allocation work. Any usused cable pair in any distribution box may be selected and used, which means that complete utilization of cable pairs has been achieved. This significantly increases the throughput of cable lines. Thus in cable distribution engineering it will only be necessary to take care of route selection and determine capacity and reduction points.

IV. The Basic Pattern of China's Subscriber Cable Network

To sum up the above, The basic pattern of China's local telephone subscriber cable network, is the prospect for reform of the cable distribution system as shown in Figure 2.
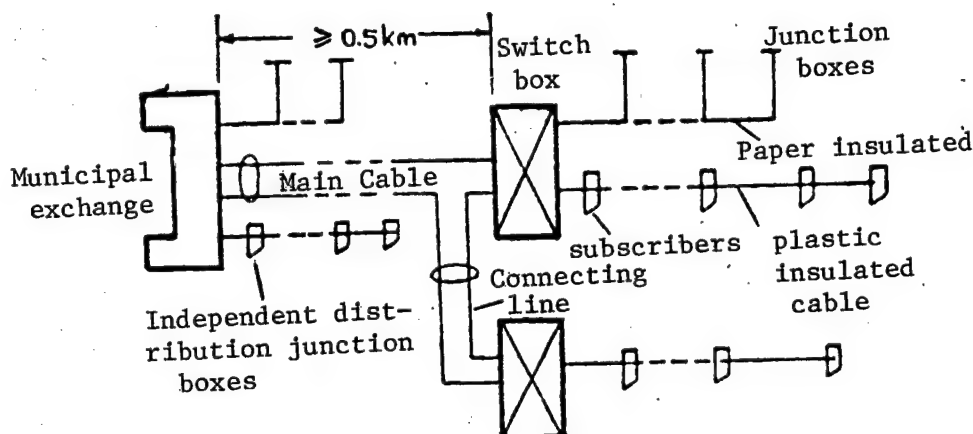
Figure 2.

A. Switching boxes will not be established in areas within 0.5 km of local exchanges, directly using free distribution of basic direct distribution without resorting to group distribution, viewing this area as a fixed operational entity.

B. The remaining areas are divided into a number of corresponding fixed switching areas, and cables connected to the switching boxes may come from different main cables. In addition, unused cable pairs may also be used as connecting pairs as appropriate, or take advantage of expansion to engage in appropriate group distribution with main cables, so that the main cables of 1-3 switching areas may be used interchangeably.

C. Among the distribution cables of the switching area, free distribution will be adopted in the case of fully plastic-insulated above-ground cable while direct distribution will be adopted in the others.

D.   Different set numbers of years will be prescribed for main and distribution cables.

Realization of the above reforms is certain to increase economic benefit, so that local telephone exchange communication will expeditiously meet the demands for rapid development posed by the four modernizations.

8174
CSO 5500/4165

BRIEFS

XIZANG GROUND SATELLITE STATIONS--The Markam County ground satellite station was officially put into operation on the morning of 17 October. The station relayed the programs of the Central Television Station on the evening of that day. The Baingoin County ground satellite station was completed on 21 October. On the evening of that day, cadres and masses watched programs of the Central Television station via the satellite. [Text] [Lhasa Xizang Regional Service in Mandarin 1130 GMT 24 Oct 86] /9599

POST AND TELECOMMUNICATIONS CAPACITY--Beijing, 24 Oct (XINHUA)--Between January and September, China's capacity of local telephone switchboards in cities increased by more than 200,000, including 70,000 or so program-controlled switchboards. The number of long distance direct dial telephone subscribers also increased by some 7,900 households over last year. During the first three quarters of this year, China opened up 17 inter-province main automobile post routes and 1 railway route, 3,500 or so long distance telephone lines, and 200 or so telex trunk lines. By the end of September, all provincial capitals, except Hohhot, Xining, and Yinchuan, had opened telex lines. [Summary] [Beijing XINHUA Domestic Service in Chinese 1413 GMT 24 Oct 86 OW] /9599

CSO: 5500/4136

HANOI-VINH TELECOMMUNICATIONS SYSTEM COMMISSIONED

BK111043 Hanoi Domestic Service in Vietnamese 2300 GMT 10 Dec 86

[Text] To welcome the Sixth Party Congress the heroic Signal Corps has commissioned a radio telecommunications system linking Hanoi with Vinh. This is a modern technological project for which an economic-technical feasibility study has been approved by the state. The people of Vinh Municipality will be able to watch directly the programs transmitted by the Central Television Station during the course of the party congress. The leading organs of a number of provinces will be able to maintain direct contact with Hanoi via this system.

To commission this project after 14 months of creative labor, cadres and soldiers of the Signal Corps had to overcome difficulties in moving millions of metric tons/km [unit of measurement as heard] of iron and steel, equipment, and building supplies without mishaps; successfully erect, assemble, and install 8 antenna towers 10-62 meters high; dig and fill nearly 10,000 cubic meters of earth and sand; and complete more than 3,000 square meters of buildings to house machinery and equipment and accomodate operators.

The Signal Corps has designed and successfully manufactured a number of pieces of equipment meeting technical standards for installation in the various communication links.

In completing construction work on the Hanoi-Vinh radio telecommunications system, the Signal Corps has saved tens of millions of dong for the state, including several millions of dong's worth of foreign currency.

/9604
CSO: 5500/4306

BRIEFS

VUNG TAU COMMUNICATIONS STATION--After 6 months of hard and resourceful work in an emulation movement to welcome the Sixth Party National Congress and to commemorate the 69th anniversary of the great Soviet October Revolution, with the assistance of the Soviet Ministry of Postal Services, of the Vietnamese Oil and Gas Joint Enterprise, and of related sectors, the post-office sector has completed the construction, assembling and calibration of the multipurpose microwave communications station of Vung Tau and officially made it operational. The station serves the needs in information, leadership, and other cultural and livelihood needs of the industrial zone for the exploration and exploitation of oil and gas of our country. It is a technologically modern construction containing a set of whole equipment manufactured under the newest industrial technique using microcircuits and semiconductors. The television equipment has an antenna with high sensitivity and can directly receive signals from a Soviet television station via an inter-Sputnik satellite. Its transmitter can air television programs to serve the people of Vung Tau and cadres and workers assigned to oil rigs at sea. Meanwhile, through the wide-band microwave relay line Vung Tau-Ho Chi Minh City, the station can receive television programs emitted by the Ho Chi Minh City television station and the Hoa Sen II surface station to rerun in Vung Tau and the other way around, the station ensures the emission of telephone and telegraphic signals, facsimiles, numerical signals, and images from Vung Tau back to Ho Chi Minh City through the Hoa Sen II surface station and communications satellites. THe station can establish direct contacts with Moscow and anywhere in the world. [Text] [Hanoi NHAN DAN in Vietnamese 3 Oct 86 p 1] 9458

DA NANG'S BROADCASTING SYSTEM--Starting with a 100-watt system with only 4 public speakers on the first days of the liberation, Da Nang City has now a 7,000-watt transmitter and 10,150 small public-address systems spread in its 28 subwards. Every day, the city people can listen to four different systems of broadcasting: central, provincial, municipal, and subward. Parallel with the development of the broadcasting networks and stations, the city established a system of correspondents composed of hundreds of persons who provided information or wrote articles for the city and subward broadcasting systems. The broadcasting systems of the Hai Chau 1, Hai Chau 2, Chanh Gian, An Khe, and Nam Duong Subwards were recognized as good basic broadcasting stations. Many enterprises and basic units in the city also had broadcasting stations with rich offerings. To commemorate the Sixth Party National Congress, the Da Nang broadcasting station has recently completed the construction of three new

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stations in the An Hai Dong, Vinh Trung, and Nai Hien Dong Subwards, and installed over 1,000 small speakers to reach the people's homes. [Text] [Hanoi NHAN DAN in Vietnamese 16 Oct 86 p 2]   9458

TELECOMMUNICATIONS LINE LINKS HANOI, VINH--Hanoi VNA 11 December--A micro-wave telecommunication line linking Hanoi and Vinh, capital of Nghe Tinh Province in central Vietnam, has been put into operation just in time, to beam live television programmes on the Sixth Party Congress from Hanoi. Also on this occasion, a prefab electric pole factory has been commissioned in Quy Nhon, capital of Nghia Binh Province, with an annual output of 1,200 poles. The Yen Vien Engineering Factory has put into service a scrap steel roller with a capacity of 1 ton per pouring. A 66-kw hydro-electric power plant has been installed in Giang District predominantly inhabited by ethnic minorities in the central porvince of Quang Nam-Danag. [Text] [Hanoi VNA in English 0709 GMT 11 Dec 86 OW] /12232

CSO: 5500/4307

INDUSTRY CALLS FOR PROBE OF BELL'S BCSI, BCG MERGER

Ottawa THE OTTAWA CITIZEN in English 28 Nov 86 p C3

[Article by Greg Barr]

[Text]   The recent amalgamation of two Bell Canada sales units is causing "serious disruption" in the telecommunications market and should be investigated immediately, says the head of a national telecommunications industry association.

Don Braden, president of the Association of Competitive Telecommunications Suppliers (ACTS), says Bell's decision to merge the Bell Communications Systems Inc. interconnect firm with Bell Canada's business communications group is an attempt to "engage in a low-pricing strategy" that may not be in the best interests of the industry.

Bell announced the move Nov. 3, saying that BCSI, which was previously owned by Bell Canada parent Bell Canada Enterprises Inc. of Montreal, had been sold to Bell Canada on Oct. 1.

The new business unit, dubbed Bell Information Systems, will now be the single sales and servicing source for customers who had previously dealt with BCSI or Bell.

In a Nov. 24 letter to Fernand Be½lilse, secretary general of the Canadian Radio-television and Telecommunications Commission, Braden said there is sufficient cause for an immediate CRTC investigation into the BCSI sale to Bell Canada.

"ACTS is very concerned about the manner of the acquisition and the conduct of the two companies during the transition phase," says Braden in the letter.

ACTS maintains that the transaction should be investigated for two reasons: that it may violate certain accounting and reporting requirements that Bell must meet to satisfy CRTC regulations, and, that BCSI dropped prices on telecommunications equipment just before the amalgamation was announced.

Braden called on the CRTC to find out if the price Bell paid for BCSI was fair, and if Bell covered BCSI financial losses. These financial transactions should be monitored, he said, to ensure that there

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was no cross-subsidization of finances between BCSI and Bell that could "cause a burden" on Bell's seven million telephone subscribers.

BCSI was created in 1980 after the so-called terminal attachment decision was handed down by the CRTC, allowing customers to buy equipment from Bell competitors, rather than strictly lease the systems from Bell as had previously been the case. BCSI was the country's largest interconnect firm in 1985 with sales of $60.5 million, or 20 per cent of the market.

The formation of the new division requires that Bell's 3,600 business communications group employees will be integrated with BCSI's 400 employees, though the formal amalgamation is not expected to be completed until early 1987. Braden says the CRTC must monitor the transition carefully.

/13104
CSO: 5520/8

NEW CONDITIONS ANNOUNCED FOR SALE OF TELEGLOBE

Toronto THE GLOBE AND MAIL in English 20 Nov 86 p B4

[Article by Andrew McIntosh]

[Text]

OTTAWA

Proceeds from the sale of Teleglobe Canada, the federal Government's most profitable Crown corporation, may be used to finance a $1-billion assistance program for western grain farmers, Minister of State for Privatization Barbara McDougall says.

Mrs. McDougall said the revenue derived from the sale, which she now expects to be completed before March, 1987, will be pumped into the Government's consolidated revenue fund.

Money in the fund can be used by the Government to cover any sudden or unforeseen expenditures, such as the $1-billion in assistance payments Prime Minister Brian Mulroney promised farmers last month to compensate them for sharp drops in world grain prices.

Mrs. McDougall also suggested that the proceeds may be used to make up for the revenue the Government lost when it decided to abolish the Petroleum and Gas Revenue Tax earlier this year.

Mrs. McDougall made the remarks as she announced new conditions under which the Government plans to sell Teleglobe Canada, the country's overseas telecommunications carrier.

The new conditions result from a review of the policy issues related to privatization of the corporation, which currently handles all international telecommunications traffic in Canada.

One such condition, announced by Communications Minister Flora MacDonald, who joined Mrs. McDougall for the announcement, forbids any foreign-owned telecommunications carrier from owning any stake in Teleglobe.

British Telecom PLC and GTE Corp. of Stamford, Conn., were known to have submitted bids on Teleglobe when the Government first invited purchase offers in 1985.

Another condition prevents domestic telephone companies from owning more than 40 per cent of Teleglobe, Mrs. MacDonald said.

"We don't believe there should be a concentration of company ownership in this field," she said. "We feel that in the whole field of telecommunications, there must be diversification among the owners and we have sought to avoid any over-concentration."

Other conditions attached to the sale would require that the successful bidder:

☐ Limit to 20 per cent ownership of Teleglobe by any non-foreign telecommunications carrier.

☐ Maintain the corporation's headquarters in Montreal and re-

spect existing collective agreements with its 1,300 workers.

□ Put in place an employee share-ownership plan allowing personnel to collectively purchase up to a 5 per cent interest in Teleglobe.

□ Undertake some form of sale of shares in Teleglobe to the public after an inital five-year period of transition. During this transition period, Telegobe's new owners will remain the only overseas Canadian carrier.

"Teleglobe will remain the only company providing overseas service for at least the next five years," Mrs. MacDonald said.

Mrs. McDougall said that those parties who submitted bids for Teleglobe before the Government initiated the policy review and delayed the privatization last fall are welcome to submit fresh offers.

"It's a new bidding process. . . . Our expectation is that those who were interested did bid the last time and will come forward again."

Among those also known to have expressed interest in Teleglobe are the Caisse de Dépôt et Placement du Québec, the Quebec Government's powerful pension fund, Power Corp. of Canada, and Canadian Pacific Ltd.

The Government's adviser on the sale, Dominion Securities Inc. of Toronto, has been instructed to contact the original bidders and discuss with them the new conditions, Mrs. McDougall said.

- The deadline for new or revised bids is January, 1987. "We will hopefully select the winning bid in February and close the deal shortly after that," she added.

Asked why the Government was proceeding with the sale when Teleglobe reported $53.2-million in profit last year, the Privatization Minister replied: "We don't believe that the Government should be in what is essentially a commercial enterprise, whether it is making money or not."

Conservative ministers said that effective Jan. 1, 1988, Teleglobe will cut all rates for overseas phone calls by at least 13 per cent. Telex rates, they added, will be reduced by 10 per cent. A new act of Parliament would allow the Canadian Radio-Television and Telecommunications Commission to regulate all activities of Teleglobe under new owners.

Liberal MP and communications critic Sheila Finestone said that by announcing the new conditions, "the Government has not only changed the rules of the game, but it has changed the game as well."

She described the Government's efforts to privatize Teleglobe since its election victory in 1984 as "a series of unco-ordinated initiatives and conflicting statements."　　　♪

CRTC TELLS GLOBAL TV TO INCREASE SPENDING ON CANADIAN SHOWS

Toronto THE GLOBE AND MAIL in English 15 Nov 86 pp A1, A2

[Article by Edward Greenspon]

[Text]

In a strong signal to other broadcasters, the federal communications regulator has told Ontario's Global Television that it is profitable enough to increase significantly its spending on Canadian programs.

Global must more than double its expenditures on Canadian dramas, variety shows, musicals, children's programs and documentaries, the Canadian Radio-Television and Telecommunications Commission said yesterday in renewing the station's licence for five years.

The commission praised Global for surpassing past commitments on Canadian programming, but said that the company can do even better. The service is received by one-half of English-speaking Canadians.

The tough decision was timed to send a message to the CTV network, which is to appear before the commission on Monday, CRTC officials said privately.

CRTC chairman André Bureau said the decision underlines his message of the past few months that he expects a bigger contribution to Canadian programming from the larger players in the broadcasting system. "We want people to know that when we say something, we're serious about it," he said.

Global's licence renewal is conditional on its spending at least $5-million a year to broadcast 200 hours of original Canadian entertainment programs, mainly in the peak viewing hours of 8 p.m. to 11 p.m.

Last year, Global spent $2.15-million — $1-million more than was required — on 206 hours of this type of programming.

In its licence-renewal application, however, Global management would commit itself to only 166 hours a year and a $2.5-million annual expenditure.

But the CRTC said Global can afford more because its financial position has improved since its last licence was awarded in 1982 and it has benefited from the creation of a government fund that shares the costs of Canadian productions. Global's profit before taxes and interest expenses

amounted to $20-million last year on sales of $88-million, the commission noted.

"We said we won't see you for five years, so don't tell us that you will do just what the average was during the last five years," Mr. Bureau said. "We can't accept that."

Global president Paul Morton said the decision will not cause him too much pain because the company was planning to exceed its promises on Canadian programming anyway — although not to the tune of $5-million on original entertainment programs.

The CRTC took measures to ensure that none of the extra money for entertainment is taken from Global's news programs. The station was ordered to maintain its $12.7-million news budget.

"There is no question it comes out of profits," Mr. Morton said of the increased obligations.

Given that Global was commended for its exemplary record, the clear message to the broadcasting industry is that the CRTC is deadly serious about getting tough on Canadian programming, he said.

Industry observers think that Mr. Bureau's timing in releasing the Global decision is designed to forewarn CTV that he is not satisfied with its plans for increasing Canadian programming. The major initiative that CTV proposes for the next five years is an increase in Canadian dramatic production from 90 minutes a week to two hours.

While yesterday's decision generally praised Global, the commission punctured the station's ambitions of quickly evolving into a national network. Global has been hoping to become the lynchpin of a network of independent television stations, a concept supported by the recent Caplan-Sauvageau federal task force on broadcasting.

The CRTC would go no further than endorsing Global's practice of providing programs and newscasts to other stations. "This does not, however, confer a national mandate on Global," the decision said.

The station will be allowed only to fill in gaps in Ontario where its signal is not currently available, the CRTC said.

The commission's decision also addressed the problem of a legal dispute for control of Global between Mr. Morton and his partner, Seymour Epstein, and Winnipeg businessman I. H. (Izzy) Asper.

Each side has five seats on the board of directors, with three other directors not directly nominated by either side. The commission made the arrangement binding to avoid any deadlock in station decision-making.

/9274
CSO: 5520/6

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BRIEFS

CEMA TELECOMMUNICATIONS MEETING -- Prague Nov 28 (CTK) -- The Council of Chief Constructors of a Unified System of Telecommunications Equipment of the Council of Mutual Economic Assistance Permament Commission for the Radio Engineering and Electronic Industry ended its four-day session by signing a protocol at Karlovy Vary, West Bohemia today. Some seven dozen experts from Bulgaria, Cuba, Czechoslovakia, GDR, Hungary, Poland, Romania and the Soviet Union signed agreements on cooperation in the development of the telecommunications equipment system and exchanged information on the progress of work in individual countries. The development is to be followed by the production and construction of the international network some time after 1992. Czechoslovakia has been assigned the task of main switchboards for telephone exchanges in this division of labour. The unified system of telecommunications equipment is one of the main tasks of the CMEA states comprehensive program of scientific-technological progress up to the year 2000. It is aimed at developing equipment for the transmission of all types of digital information and thus achieving maximum quality of communications and cuts in energy, material and labour consumption. [Text] [Prague CTK in English 2055 GMT 28 Nov 86 LD] /12913

CSO: 5500/3009

AGENDA OF 1986 TELECOMMUNICATIONS SYMPOSIUM SUMMARIZED

Warsaw SLOWO POWSZECHNE in Polish 8 Oct 86 p 3

[Article by Stefan Sokulski: "Communications: Betting On Modernity"]

[Text] Most symposiums and meetings are of little interest to people.
However, I admit I was interested in attending the National Telecommunications
Symposium which was held in Warsaw during the second half of September.
Probably in no other branch of the national economy is the support and
collaboration of science so important as in communications, which is permeated
with modern technology and techniques.

Digital systems, fiber-optics or electronic switching systems are little
understood by the average person. But without them we cannot hope to develop
and catch up with the rest of the world. They are essential activities if one
considers that Poland continues to find itself at the bottom of the list in
Europe, ahead only of Albania, despite our recent activities in these areas.

It is difficult to foresee what this latest symposium will produce and what
fruits it will bear, because the reading of dozens of papers and the many
hours of discussions guarantees and prejudges nothing. Also, it should be
remembered that meetings of this type, though very representative of their
group, do not involve as a rule details and current problems. They serve
mainly as means of exchanging experiences and outlining main directions and
development trends.

It appears that the latest symposium emphasized one important task: it showed
our communications people how far we are behind the best and and our position
on the list achievements and technological advances. It should be added that
not too long ago we were among the leaders in fiber-optics. Now we are 15
years behind the leaders. In digital TV we are over 10 years behind.
Unfortunately, many more such examples can be cited.

Justifications may be sought in our lack of resources and in the overall
difficulties of our economy, but it would not be the entire truth. There are
many reasons for the lag and neglect. However, without greater support from
science, we will be unable to be numbered among the average, to say nothing of
the best.

In opening this year's symposium, Minister of Communications Wladyslaw Majewski stated that not only was it a forum to exchange ideas but also an excellent opportunity to make contacts, which at times are more useful than day-to-day work. It appears the minister is also correct when he states that it is necessary to change our approach to telecommunications, which for years has not been an especially loved child. As is known, the wind always blows in the eyes of the poor man, and the struggle for existence is not easy. However, I believe the activities of the communications sector and its leaders, often misperceived by the public, had a profound effect on the climate surrounding communications and its status. Increased quantitities were not always associated with improvements in quality of services. For example, with every increase in telephone and postal rates, nothing was ever said about better postal service or better operating telephones. Without such specific declarations, it is difficult to create a better climate and to show the way to the decision-makers.

Returning to the September symposium, it should be said that in addition to the very specialized themes and quite hermetic discussions, there were many papers of interest to the masses of people using telecommunications services. Among other things, I have in mind the development of digital systems that are being applied more and more worldwide and that have been mandatory areas of development. The advances in digital technology and cheaper integrated circuits have contributed to the rapid development of digital techniques. These two ites permit the design of cheap digital equipment that are competitive with previously used techniques. In addition, the introduction of digital technology enabled equipment to be lighter and smaller and enabled the introduction of many improvements for telephone customers.

Popularizing fiber-optic technology also is very important, but this depends on progress in research on fiber-optic equipment and cables. World results are such that fiber-optic technology will probably dominate telecommunications over the next few years. But will we be able to contribute to these applications and research? Being on the sidelines, we will continue to fall further behind, losing opportunities to catch up.

The proper operation and maintenance of a digital system is a problem now and will be so in the near future. Digital technology is a specific technology and requires a specific approach to problems associated with its operation and maintainance. Since Poland's digital telecommunications network is still in its initial stage of development, its maintenance and repair are relatively easy, but steps must be taken now to avoid operating problems several years hence.

I am dedicating much space to the digital system because there is not quicker way to the rapid development of telecommunications. If we started to apply routine digital technology earlier, then the pile of applications for telephones would be diminishing and not increasing, and the quality of telecommunications services would be somewhat higher. These would be the results of impelementing innovations and progress, and not only in communications. Digital systems now are a popular and timely subject, which is necessary to permit development and the maintenance of a proper pace. Thus, both the exchange of experiences and the forum of the most talented minds in

communications enabled us to accelerate the pace of modernizing telecommunications. There is no time to consider and examine other ways because no one will install 1.5 million telephones for us and improve the operation of the entire telecommunications system, an area that is very costly but at the same time essential for the proper functioning of the country.

11899
CSO:5500/3002

BRIEFS

NEW TELECOMMUNICATIONS CENTER--A telecommunications center costing over 7 billion zlotys will be built in Katowice. It will be the largest investment of the Ministry of Communications in the Upper Silesia area. Construction is projected for 1986-1993.The complex of buildings will encompass about 114,000 cubic meters. Among other things, an automatic long-distance exchange will be installed that will satisfy needs up to the year 2020, and an electronic telegraph-teleinformation exchange will also be installed. In conjunction with this, the plan calls for the installation and operation of local and long-distance exchanges in Zawiercie, Pszczyna, Rybnik, Raciborz and Chrzanowa, as wel as in Bielsko Biala, Czestochowa and Opole Provinces. [Text] [Katowice TRYBUNA ROBOTNICZA in Polish 9 Sep 86 p 4]   11899

CSO:5500/3002

CARIBBEAN TELECOMMUNICATIONS OPPORTUNITIES DISCUSSED

Conference in Jamaica

Kingston THE DAILY GLEANER in English 10 Nov 86 p 1

[Text]

THE MINISTER OF MINING, Energy and Tourism, Senator the Hon. Hugh Hart, will declare open this morning a four-day international conference on tele-communications investment opportunities in the Caribbean Basin for small Jamaican and United States business interests.

The conference, co-sponsored by the National Telecommunications and Information Administration (NTIA) and the Jamaica National Investment Promotion Limited (JNIP), aims to bring together small businessmen from the U.S. and in the region for them to share ideas and experiences as well as to forge joint ventures.

Also scheduled to speak at the opening are the Hon. Alfred Sikes, the assistant secretary of Communication and Information, U.S. Department of Commerce, National Telecommunication and Information Administration in Washington D.C.; Mrs. Corrine McClarty, managing director, JNIP; and Mr. Melvin Bradley, special assistant to the President of the United States, Mr. Ronald Reagan.

Other speakers during the week will be the Minister of Foreign Affairs, Trade and Industry and Deputy Prime Minister, the Rt. Hon. Hugh Shearer; and the Hon. Horace Barber, former Governor of the Bank of Jamaica and alternate executive director of the World Bank.

During the four days, communications policies in the U.S. and the Caribbean will be examined, fundamental considerations for doing business in both places will be looked at, and educational telecommuncations projects are to be discussed.

Sources of investment finance, regulations, international trade incentives/barriers and the structure of international financial lending institutions are also on the agenda.

Presenters will explore telecommunications opportunities available throughout the region and ways of establishing solid relationships will be discussed.

Conference Keynotes

[Text] **THE telecommunications industry has the potential of creating a broad range of jobs and large profits for both developed and developing countries, Senator Hugh Hart, Minister of Mining, Energy and Tourism, said yesterday.**

He made this remark as he officially opened an international conference on telecommunications investment opportunities in the Caribbean Basin for small Jamaican and United States business interests at the Jamaica Pegasus Hotel, New Kingston.

He described the conference as "important and timely" and told the more than 100 participants that it came at a time when there was no shortage of critics of the Caribbean Basin Initiative and its results. The holding of the conference "comes as new encouragement to us in the Caribbean," he said.

The four-day conference is jointly sponsored by the National Telecommunications and Information Administration (NTIA) and the Jamaica National Investment Promotions Limited (JNIP).

Noting that the transmission, storage and retrieval of information was perhaps the biggest growth industry worldwide today, Senator Hart said, "It involves a rapidly-changing technology which creates, as few other sectors have ever done, an increasingly broad range of opportunities both for employment and for profitability in developed as well as developing countries.

"In this way," said the Minister, "it allows us to share the investment potential which arises out of new technology among countries, and among entrepreneurs both large and small".

The "constantly expanding" telecommunications industry, he pointed out, also had the potential for transforming many other traditional businesses, such as tourism.

Wishing the conference every success, Senator Hart said its achievements could only be of "dual benefit" to Jamaica and the Caribbean region. The immediate benefit would accrue from additional investments in the region.

In her contribution, Mrs. Corrine McLarty, managing director of the JNIP, said the industry could be a vehicle for positive change throughout the Caribbean region. Also, she said, this industry would continue to display remarkable growth "for quite some time".

She told her audience that "in reorienting our economies, we cannot ignore the implications of the telecommunications sector, both in terms of assisting in our internal development and preparedness and in terms of plugging into the global marketplace as a production location".

"We are today faced with a golden opportunity. Before us now is the chance to realize one of the promises of the telecommunications age — that this industry can be a vehicle for positive change".

The economies of the region, faced with pressing problems, were committed to devising creative solutions through regional co-operation at both the private and public sector levels, declared Mrs. McLarty.

Also speaking at the official opening were the Hon. Alfred Sikes, the Assistant Secretary of Communication and Information, U.S. Department of Commerce; and Mr. Melvin Bradley, Special Assistant to the President of the United States.

Mr. Sikes said it was time Caribbean countries redoubled their efforts to bring the region closer to the United States "because we share the same space". Lack of adequate telecommunications could impede economic growth, he said.

The telecommunications industry was a very significant one, said Mr. Brodley, who went on to state that new opportunities were being created almost daily.

Joint Venture Possibilities

[Text] NEGOTIATIONS on joint venture deals between Caribbean and United States firms valued at just over US$41 million (J$225.5m) have been initiated among participants in the international conference on "Telecommunications Investment Opportunities in the Caribbean Basin", which ended yesterday at the Jamaica Pegasus Hotel.

Although most of the ventures are in an early stage of negotiation, at least three have been concluded, or areclose to conclusion; and the National Telecommunications and Information Administration of the U.S. Department of Commerce, Washington D.C., co-sponsors of the conference with the Jamaica National Investment Promotions (JNIP), will assist in solidifying them.

These announcements were made at yesterday morning's closing session which was addressed by the Minister of State for Culture, the Hon. Mike Henry, and by Barbados' Minister of Transport, Telecommunications and Works, the Hon. Philip Greaves, among other speakers.

Miss Gayle Nelson, U.S. attorney representing clients in broadcasting before the U.S. Federal Communications Commission (FCC), announced that agreement in principle had been reached on a joint venture between GEO Star, a U.S. communications firm, and the Caribbean Broadcasting Union (CBU) for a new satellite communications service to be called Radio Determination Satellite Service.

Phase One of this project will involve US$10 million and will initiate the service on a limited basis. Phase Two, for which no figure was given, will involve the introduction of a full service. It is also anticipated that a manufacturing plant would eventually be opened in a Caribbean island to service the system.

Mr. Steve Chester, senior vice-president of GEO Star, said his company provided a radical new satellite service, including a two-way radio message service working directly through the satellite. It would allow persons in Kingston to communicate by radio directly with persons as far away as London by satellite, without any interruptions.

This would be of "tremendous life-saving capabilities", especially for fishermen who were lost at sea, he said.

A European version of the system, named Lockstar, is being developed simultaneously with the Western Hemisphere system. The People's Republic of China will be introucing one in the 1990s, and Australia and India are also involved.

Mr. Jerome Sardine, corporate and financial adviser to the Caribbean Television Network (CTN), announced that CTN through the Antigua-based Caribbean Project Development Facility had obtained funding for the upgrading and expansion of CTN into Anguilla.

Third World Communications Productions, Grand Cayman, of which he is the managing director, has secured relationships with two companies — one in Hollywood, California, and the other in New York — to enter into joint ventures in the production of various cultural educational programmes as well as mini-series in the Caribbean.

Miss Carol Emery, Associate Administrator of the Office of Policy Analysis and Development of the NTIA,said that another deal was almost concluded between a Colombian communications firm, Cosmos, and a Caribbean firm.

Miss HelenaMitchell, Manager of the Minority Telecommunications Development Programme of the NTIA, told the session that 72% of the persons involved in investment dialogue were interested in joint-venture projects. Their assets ranged from $100,000 to $5 million, she said. Approximately 87 individuals were involved in the talks as well as 27 firms.

Caribbean Views, Opportunities

Kingston THE DAILY GLEANER in English 19 Nov 86 p 32

[Text] KINGSTON, Jamaica, Nov. 11, Cana

CHEAP labour, the existence of basic infrastructure, lowering tariffs for satellite services and the willingness of regional corporations to enter into ventures to earn foreign exchange provide excellent opportunities for investment in telecommunications in the Caribbean, U.S. and regional experts concluded here today.

But there was expression of concern over government regulation of telecommunications as a panel discussed investment possibilities at a conference here.

"If you have the right idea, the right market, then this is a very fertile area for you to get into," said Oliver Clarke, managing director of the **Gleaner** newspaper here as well as chairman of the Board of the Caribbean News Agency (Cana).

The conference is being sponsored by Jamaica National Investment Promotion (JNIP) and the National Telecommunications and Information Administration (NTIA) of the U.S. Department of Commerce. It is geared mainly for U.S. minority entrepreneurs willing to invest in the Caribbean.

Clarke told the seminar that the wish by regional governments to control radio and television would probably make investment in those areas problematic, but stressed, that there were several areas still open, particularly if production was being done for export as the Caribbean sought to earn foreign exchange.

"Every major corporation in the Caribbean is desperately trying to restructure to earn more foreign exchange," he said.

Clarke's view was supported by spokesman for Caribbean Telecommunications and Media Organisations seeking to do business with American partners.

"It is just a question of identifying the initiative that might be beneficial to both of us," said John Williams, business development officer of Barbados External Telecommunications (BET), which controls International Telecommunications in that east Caribbean island.

"...BET has already put aside the funds for investment in any initiative," Williams said.

He did not say how much money BET, which is jointly owned by the Barbados Government and the British Cable and Wireless, had earmarked for joint venture investment, but stressed that his organisation would seek a genuine partnership as well as respect for the "aspirations of the Barbadian people."

Investors entering into arrangements with BET could expect support from the Barbados Government, Williams said, pointing out that his organisation, with its up-to-date facilities could provide almost any satellite and telecommunications facility by a North American investor wanting to do off-shore business in Barbados.

Hugh O'Brien, the chief accountant of Trinidad and Tobago Television (TTT) also dropped an invitation to investors.

"We hope to invite potential investors to come in with us and discuss with us our plans for diversification," he declared.

But more far reaching in terms of programme content was a proposal for a syndicated television news and information-service proposed by Jerome Sardine, managing director of the Cayman Islands-based Third World Communications Production (TWCD).

Sardine, like many Caribbean Academicians and media experts at the conference, complained of the one-aided media programming reaching Caribbean via satellite and video recorders.

There was an increasing need for Caribbean Basin persons themselves and the outside world to be better informed about the region.

"It is our belief that a total Caribbean news programme would fulfil the need for the world about the Caribbean," Sardine said.

The proposal by his company, using both U.S. domestic satellites and the Intelsat system, was to provide "a truly independent news programme" anchored from facilities in the Cayman Islands and Anguilla.

The primary markets would be individuals and institutions in the region and in U.S., Canadian and European cities with an interest, concern and commitment to the Caribbean.

"The programme would produce various feature stories, along with daily segment feed or pre-recorded spots", anchored live.

"The basis of news gathering would be various wire services, for example the Caribbean News Agency. Also a network of handpicked correspondents, each skilled professionals with a knowledge of their territory," Sardine said.

Government news agencies would also be a part of the news sources in the bid to get a rounded picture of the Caribbean.

Officials noted that the U.S. Information industry was already providing off-shore jobs in the Caribbean, especially in data entry.

Judith O'Niell, a U.S. lawyer who is also acting for Teleport International, which is to establish a teleport in the Northwestern Jamaica City of Montego Bay, said American companies were now generating 5,000 off-shore data entry jobs, with 2,500 these in the Caribbean.

Countries like Jamaica and Barbados were already benefitting and the number of jobs would increase as U.S. companies become more involved in information technology and farm out more of the labour intentive side of the work off-shore.

"Lowering tariffs for satellite services and other telecommunications facilities open opportunities for off-shore telecommunication facilities," she said.

Low labour rates in the region made the Caribbean attractive for data entry programmes, O'Niell pointed out, saying that companies could save between US$30,000 and US$70,000 a month by going off-shore with its telecommunications operations.

The proposed teleport operation in Jamaica will be a virtual telecommunications industrial estate, using its own satellite receiving earth station and U.S. domestic satellite for the transmission of data, voice circuitry and teleconferencing.

However, the idea has not gone down well with the local state-owned Jamaica International Telecommunications Company (JAMINTEL), which will be by-passed.

JAMINTEL officials have quietly told the government that they could provide all the services that teleport international, using facilities of American satellite company will make available.

However, O'Niell said that using JAMINTEL for their facilities requiring the need for going through the Intelsat system — the International Satellite coverage agreement among nations — would make their cost prohibitive.

Ted Johnson an economist in the U.S. Department of Commerce told delegates that while there were good opportunities in the region, regulations of telecommunications provided difficulties.

Often profits from state monopolies went to general revenue instead of being ploughed back into the operations.

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Oliver Clarke agreed.

"Advances in technology often outpace the need to upgrade out laws," he said.

Jamaica is actively considering deregulating its telecommunications sector and will soon be looking in depth at the possibility with help from the U.S. Federal Communications Commission (FCC).

Ted Johnson, a senior economist in the U.S. Department of Commerce told a telecommunications investment conference here that the Jamaicans had been discussing the proposal with the Americans.

"Jamaica is talking about the deregulation of the telecommunications industry," Johnson said.

U.S. officials now in Kingston for the conference were having talks with officials of the Jamaica Public Utilities Ministry on a timetable for a Washington visit for talks with the FCC to discuss the proposal and view the American model and experience.

The conference here, bringing together Caribbean officials and mainly minority U.S. entrepreneurs, business officials and academics, is sponsored the National Telecommunications and Information Administration of the Department of Commerce and the Jamaica National Investments Promotions (JNIP).

The Americans have done a study for Caribbean Basin countries on telecommunications capacities and needs if they are to upgrade service and attract investment in the fast-growing information sector, particularly at the labour-intensive end such as data processing.

As in much of the English-speaking Caribbean, the domestic telephone system here is controlled by a state-owned Jamaica Telephone Company.

Another majority state firm, JAMINTEL, largely holds a monopoly for International Telecommunications, but the law gives the government some latitude to licence other systems.

It is this provision that the government is exploiting to give the go-ahead to an American firm to establish a teleport in the city of Montego Bay, by-passing JAMINTEL.

The company, Teleport International, will provide a sort of industrial estate for off-shore telecommunications and information industry facilities to American companies.

It intends to use U.S. domestic satellites and have its own earth station.

The FCC recently ruled that Teleport International could use the American domestic satellite for two-way communication between Jamaica and the United States, using in its argument the fact that the service was within the 'footprint' of the U.S. system, plus the need to build bridges of relations.

This ruling essentially means support for the company to skirt Intelsat, the International System (of which Caribbean countries are members), regulating and providing international satellite service.

The Jamaica government's decision an the FCC ruling have angered top officials and engineers at JAMINTEL. Although they declin to speak publicly on the subject, JAMINTEL has told the government that it could carry through such a project on its own or could have provided all the requirements of Teleport International.

But according to Judith O'Niell the move to by-pass JAMINTEL, which would have to utilise the Intelsat system, was on purely economic grounds.

"The tariff structure with Intelsat was prohibitive," she said. Intelsat costs were higher, she said, because of "across subsidisation" in an effort to provide satellite services to areas where there was limited traffic. The result is that their "feeds" are not cost effective.

Even with a recent announcement of Intelsat of a 'cabinet' service providing a 50 percent reduction in tariffs to the region, it would still be 'substantially more expensive' to go that route for the Teleport service than by U.S. domestic satellite, O'Niell said.

JAMINTEL officials, telecommunications sources here say, remain unconvinced of the merits of the FCC ruling and the Jamaica Government decision.

If Teleport had to go through the Intelsat system, as would have been

the case before this precedent-setting ruling, the cost differential would have been much narrower and JA-MINTEL would have also be able to take up the slack at the local end.

However, before Teleport International becomes operational which officials hope will be by May next year, its system will have to be checked by Intelsat for technical hurt to existence systems and economic hurt to the international system.

But with the full support from the U.S. and Jamaica governments officials here believe the hurdle will not be difficult.

/13046
CSO: 5540/003

BRIEFS

SATELLITE STATION CONTRACT--Buenos Aires, 15 November--The ground station division of Italy's Selenia Spazio has signed a 3 million-dollar contract here with Argentina's state telecommunications company Entel for the extention and updating of a ground station for satellite Intelstat Telecommunications in Balcarce, 400 kilometers south of the capital. Selenia is a company in the state holding company colossus Iri-Stet and one of the world leaders in the field of telecommunications via satellite. The contract provides for the modification of equipment at the ground station and the installation of new equipment to bring facilities up to the new standards requested by Intelstat and to handle the substantial increase in telephone and television signals for Argentina. The cost of the work will be financed by credits granted by the Rome Foreign Ministry's Department of Development Cooperation. Dopnia [expansion unknown] will bear the expenses of training Argentina technical personnel. The Balcarce station was originally built in 1969 by STS, since taken over by Selenia Spazio. The pair of antennas there handle traffic mainly from Europe and North America beamed via Intelstat IV-A satellites. Following the modernization of the station, the volume of traffic can be doubled and operation costs lowered. [Text] [Rome ANSA in English 1037 GMT 15 Nov 86 AU] /12232

SATELLITE RADIO, TV CHAMBER--The Argentine Chamber of Satellite Development and Applications has been set up here in response to government decree 613 of 11 September 1986, Chamber sources said. The sources added that the decree authorizes the installation of land antennae to receive radio and TV signals via satellite. The object of the Chamber is to encourage the development of this type of reception. The Chamber committee includes Eduardo Eurnekian (Cablevision SA); Marcelo Ippolito (Digicom); Jorge Scrigna (Esi Electronica), and Octavio Zenarruza, Latinsat SRL. The Chamber also includes ABC Comunicaciones, Asociacion Argentina de Ciecias Espaciales, Coolcargo SA, DX SRL, Export Sire SA, Hentrox, Keytech, Nexo Consult Asociados, Radio Serra SACAI, Roberto C. Sarubinsky Grafin, Tecnofax SRL, Video Cable Comunicacion and Radio el Mundo. [Text] [Buenos Aires BUENOS AIRES HERALD in English 21 Nov 86 p 3 PY] /12232

CSO: 5500/2014

NATION FORMS ONE CORPORATION TO HANDLE ALL COMMUNICATIONS

FL111540 Bridgetown CANA in English 1505 GMT 11 Dec 86

[Text] Belize City, Dec 11, CANA--Government is moving to establish a new corporation to handle domestic and international communications, currently the responsibility of two separate companies.

The administration took its first step in this direction last week, announcing the takeover of the British Cable and Wireless interests here, handing over its responsibilities for international communications to the Belize Telecommunications Authority.

Officials said the government acted after Cable and Wireless refused its offer of minority shareholding in a new company, in which another British company may participate.

Cable and Wireless told government its corporate foreign investment policy has always been to hold majority shares or management control in any overseas joint venture investment. But the government told Cable and Wireless that that policy was unacceptable, in the Belizean national interest.

Authoritative sources here reported today that the government had offered a second United Kingdom company, British Telecom, shares in the new communications company being established here.

The official government announcement about the takeover of Cable and Wireless in Belize made no mention of British Telecom, saying only that Cable and Wireless has been informed of this decision and has been invited, along with another British company, to make proposals to the government to explore the possibility of their becoming minority shareholders in the new Belizean telecommunications company which will operate both the internal and external services for Belize.

News of British Telecom agreeing to participate has not been officially announced yet, but has been confirmed by a highly reliable and authoritative source.

Details of the agreement are still thought to be the subject of continuing studies both by government and British Telecom, and no formal announcement is expected prior to completion of the study.

Meanwhile, it was unofficially reported today that Cable and Wireless planned to invest nearly $60 million to expand telecommunication services in Belize beginning next year. But a skeptical Prime Minister Manuel Esquivel declared: It is very interesting that those plans only surfaced when they were informed what the government intended to do.

Cable and Wireless officials here have complained that they were not officially informed by the government of its takeover, and heard it for the first time on state radio. But Esquivel said he was surprised by those comments, noting that government and Cable and Wireless had exchanged communications about the structure of a new company.

Cable and Wireless were officially informed they could assume minority share-holding in the new company. They replied stating their policy on being majority shareholders or minority shareholders with control of the management.

We replied to them that that was not acceptable to us--neither alternatives-- and I am, therefore, surprised that they should say that they were not informed.

In 1978 the former People's United Party government and Cable and Wireless signed an agreement for Cable and Wireless to operate certain external tele-communication services in Belize. This agreement expires at the end of December 1987.

/9365
CSO: 5540/036

$21-MILLION UPGRADING OF TELEPHONE SYSTEM UNDERWAY

Belize City THE BEACON in English 15 Nov 86 p 1

[Text] The Belize Telecommunications Authority (BTA) has announced the commencement of a multimillion dollar project that will completely update the telephone system and more than double the systems' present capacity.

A release issued by BTA this week said that the construction of a million dollar building, scheduled to start by the end of this month, will mark the start of the project.

The contract for the building, which will be constructed at the BTA's compound on St. Thomas Street in the King's Park Area, has been awarded to Carlos Barillas Ltd., a local firm of building contractors. The building is expected to be completed within a year.

According to the release the building will house offices and equipment to satisfy national and international telecommunications services to customers. The project is reportedly designed to modernize and expand the telephone network, and increase the capacity of the system from 8,000 to 18,000 units. The plan further calls for the purchase of new computer controlled digital exchanges, and for digital radio equipment at an estimate cost of $20 million.

The release states that the project is in conformity with Government's policy of providing a modern and up-to-date telephone system in Belize.

/9365
CSO: 5540/036

SCHEME APPROVED FOR ELECTION CAMPAIGN BROADCASTS

Belize City THE BEACON in English 8 Nov 86 pp A, F

[Text] The chairman of the Belize Broadcasting Authority in an unprecedented move last week met with representatives of three political parties to exchange views and to formulate plans for the use of the air waves for campaigning in the upcoming Belize City Council elections.

It was agreed that broadcasts of political programmes in connection with the election campaign should commence on November 1. These broadcasts will not be censored by the B.B.A., but operators of television stations are required to observe the rule of due impartiality and the right to reply. They are also required to observe the law dealing with defamation of character, slander and the right to privacy. These broadcasts should not offend against good taste and decency and should not encourage or incite crime, or lead to disorder or be offensive to public feeling. Programmes should maintain a proper balance in the subject matter and a high standard of quality. They should be presented with accuracy and impartiality and appeal to the outlook and tastes of the television viewers. All concerned must abide by the standards laid down by the Belize Broadcasting Authority.

The Authority makes it clear that political broadcasts can only be done at licenced On Air Stations in Belize City and not at Cable stations. Each political party is allowed a total of 30 minutes viewing time per day, 15 minutes at each Belize City station. All political broadcasts will end at midnight on election eve.

Meanwhile the Broadcasting Department has stated that it will be granting 10 minutes of air time to each political party every other day from Nomination Day to election eve. On the eve of election day the Belize National Radio Network will be giving each political party a 10-minute broadcast.

It is to be recalled that the previous government had allowed only 3 minutes air time per candidate during the entire election campaign. This new move therefore is a dramatic departure from the policy of the previous administration. A spokesman from the Ministry of Home Affairs has stated that it is in accordance with the government's commitment to allow views and opinions to be freely expressed on the air waves and sufficient time in which to do so.

/9365
CSO: 5540/036

BRIEFS

TELEVISION STATION IN RONDONIA--The state of Rondonia will have a new television station, Madeira Mamore, as of 8 December. At first transmission will reach only the Porto Velho Country. By March, however, the station will cover the entire state. [Text] [Brasilia Domestic Service in Portuguese 2100 GMT 3 Dec 86 PY] /12232

TELECOMMUNICATIONS PACT WITH SURINAME--The Brazilian Communications Ministry, the Banco do Brasil, and the Surinamese Telecommunications Company today signed an agreement for almost $20 million by which Brazilian companies will modernize and expand the telephone system of Suriname, and the Banco do Brasil will finance $16 million of this project. Present at the signing ceremony were the chairman of the Surinamese Telecommunications Company, the president of the Banco do Brasil, and the Brazilian communications minister. According to this agreement, Brazil will supply communication equipment and install 20,000 telephones in Suriname. [Excerpt] [Rio de Janeiro Rede Globo Television 2151 GMT 15 Dec 86] /9604

CSO: 5500/2016

PLANS FOR PHONE SERVICE MODERNIZATION REVIEWED

Road Town THE ISLAND SUN in English 8 Nov 86 pp 5, 12

[Text] This is a brief paper outlining the present plans for the modernization of the British Virgin Islands Telephone Service. We are not in a position to provide exact dates for commissioning various parts of the system, however a valid time scale is incorporated.

1. The Telephone Exchanges

The present exchanges are all of an old electro-mechanical type of step by step switching system. These exchanges are being replaced by Northern Telecom Computer controlled exchanges, which will be located at Road Town, Long Swamp, Little Apple Bay and Virgin Gorda.

The first of these exchanges catering for the Road Town area should be operational by the beginning of Next Year. The other exchanges based on Long Swamp, Little Apple Bay and Virgin Gorda will follow within about four months.

The project team for the installation of the new computer controlled exchanges, comprising of staff from both Cable & Wireless PLC and Northern Telecom, are already working on the installation phase of the modernization programme.

On completion of the new exchanges we envisage adequate capacity to meet the requirements of the British Virgin Islands well into the next century. Other immediate advantages to the public will be I.D.D.

International Direct Dialling to most places in the world, together with greatly improved quality of service and transmission. Following on from the commissioning of these computer controlled exchanges we expect to introduce to the public additional services which will be announced in the press prior to launch.

2. The Telephone Lines

In order to utilise the new computer controlled telephone exchanges to their best advantage there has to be sufficient telephone lines to work with the exchange. Therefore it has been necessary for BVI Telephones to engage on a programme of laying new cables and communications links throughout the islands in order to compliment the expected capacity of the system as a whole.

3. The Telephone Charges

With the introduction of International Direct Dialling, we are expecting to be able to offer on most international routes and in particular routes to the U.S.A., an appreciable reduction in charges. At the present time we are unable to be more specific as these are under negotiation with the Government.

By the first half of 1987 we expect all our customers to be using the new modernized telephone system and to be taking full advantage of the improved features.

/9274
CSO: 5540/037

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SATELLITE OPTIONS STUDIED; EIGHT GROUND STATIONS PLANNED

Bogota EL ESPECTADOR in Spanish 7 Nov 86 p 3

[Article by Ricardo Luna Cano]

[Text] Santa Marta. "The communications sector can and must be
substantially improved. That is why I have proposed an indepth reorganiza-
tion of the ministry for which I am responsible, which I hope will make an
effective contribution toward optimizing public telecommunications services,"
said the minister of communications, Edmundo Lopez Gomez, during the 18th
CONFECAMARAS [Confederation of Chambers of Commerce] assembly.

The minister noted that this reorganization will draw upon past experiences
and observe the results obtained, so that they can be adapted to new times
and to new technologies. Among these fields, information technology holds
a vanguard position.

Lopez Gomez listed some projects now in progress, among which he cited
rural telephone service, the national data transmission network, satellite
communications, telephone expansion plans, and regional television channels.

He recalled that since the past decade, rural telephone service has been
programmed as a response to the social, economic, and cultural underdevelop-
ment of vast rural areas. The first phase of this plan consisted of the ac-
quisition of 19,600 lines, most of which are now in service, providing
coverage for 1,774 communities in about 570 municipalities.

During the intermediate phase—for satellite communications—eight ground
stations have been started in Arauca, Puerto Carreno, Puerto Inirida, Mitu,
Puerto Leguizamo, San Vicente del Caguan, Bahia Solano, and Acandi.

The minister reported that TELECOM [National Telecommunications
Enterprise] has been in negotiations with the IDB [Inter-American Develop-
ment Bank] to obtain a loan to finance the program's second phase; its cost
is on the order of $200 million. The balance will be financed with re-
sources from the Rural Telephone Fund and from other credits.

He added that the "National Territories" program is in progress, at an approximate cost of $84 million.

He reported that Colombia has now entered the information age. It has purchased equipment for a National Data Transmission Network, which will link Bogota, Cali, Medellin, and Barranquilla, so that both domestic and international traffic may be routed via these cities.

For the international links, he announced that there will be rapid and efficient access to major data banks in various nations; there will also be access to other national networks, so that Colombia may be kept informed on the latest technological, scientific, industrial, and cultural advances.

Satellite Communications

The communications minister said that, based on the need for a vital tool to link intercity telephone, telex, and data transmission centers, which would also be used for the transmission of television channels with national coverage, a technical-economic review is now in progress to determine whether Colombia should develop its own national satellite project or participate in the Condor regional satellite system.

He felt that the Condor system seems to offer greater advantages because of the possibility of sharing costs with other countries. This in turn would ensure a better utilization of the satellite's capacity, as the demand for services provided by the satellite would be much greater.

He stated that a proposal had recently been made by Panamsat, an independent organization. Its greatest appeal seems to be its satellite launch date: June 1987.

Expansion Plans

Lopez Gomez indicated that during the coming 4-year period, the expansion policy for telephone services will be continued, so that by the end of this decade Colombia may have a telephone density of approximately 11 lines for each 100 residents, coming close to 1,300,000 lines installed by the end of 1990.

Concerning the reorganization, the minister reported that the ministry must regain its capacity for leadership in the communications sector, seeking to perform effectively the functions assigned to it, thus justifying by its actions its existence as an organization responsible for guiding the telecommunications sector in Colombia.

On the subject of regional television channels, he stated that the substantial decrease in production and marketing costs, due primarily to technological advances, has led to the creation of some new channels. At

this time the operation of Tele-Antioquia, Tele-Caribe, Tele-Cafe, and Tele-Valle have been authorized.

This project, responding to the need for a variety of cultural, socioeconomic and geographic programming, has been combined with the authorization of commercial activity on television, without lessening the emphasis on cultural and regional programming.

He also spoke of some concerns about the orientation and operation of the regional channels, concerns which have been resolved by the Council of State.

The national government, acting through the National Radio and Television Institute, is responsible for control of the terms of Colombia's laws and statutes [covering broadcast activity].

The National Television Council will determine whether or not a proposed television channel meets the legal requisites; it also has the authority to permit the start and operation of the regional channels.

He pointed out that in their organizational and functional aspects, the channels are self-regulated.

7679
CSO: 5500/2011

KABUL DOMESTIC FLIGHT TERMINAL INAUGURATED

Kabul KABUL NEW TIMES in English 6 Nov 86 p 4

[Text]

KABUL, (BIA)—
The Kabul International Airport's domestic flight terminal was inaugurated and commissioned yesterday by Maj. Gen. Mohammad Rafie, member of the Politburo of the PDPA Central Committee and Deputy Chairman of the Council of Ministers of the DRA, and P.P. Mozhaev, ambassador extraordinary and plenipotentiary of the Soviet Union to the DRA.

The establishments of terminal, which is a part of the extension project of Kabul airport, has been built jointly by Afghan and Soviet engineers and experts, would provide more facilities for domestic flights.

Before the inaguration, Maj. Gen. Rafie attended a function held in the terminal by construction workers and employees of the airport. The commissioning of the establishments is of immense importance for civil aviation, Rafie said.

He added: "The role of air transport is important, for there are certain problems in land transportation due to geographical conditions of our country.

The state and the party have focussed keen attention on air transport. As per the instruction of the resolutions of the 18th and 19th plenums of the PDPA Central Committee. the Ministry of Civil Aviation has carried out certain tasks in this connection in different parts of the country.

The Soviet Union, this honest friend of the people of Afghanistan, besides rendering assistance in socio-economic spheres, has also contributed and will contribute to the civil aviation the outstanding example of which is the extension project of the Kabul airport."

The extension project has 36 construction establishments with a total volume of 100,000 cum. and its domestic flight terminal has been completed.

The terminal has been built in 11987 cum. and is equipped with modern facilities, including ventilation, central heating, power and water supply, drainage, fire extinguishing and telephone systems.

Faqir Ahmad, the head of the terminal, presenting information in detail, said: "The terminal includes waiting lounge, cafeteria, mother and child room, technical shops, administrative and security offices that give better services to passengers.

Alexander Petrov, Economic Counseller of the embassy of the Soviet Union said: "The successful completion of the establishments of the airport which has been commissioned before the plan is a great success for the Afghan engineers and workers and the Soviet experts."

Petrov added that the terminal has been commissioned in honour of the 69th anniversary of the Great October Socialist Revolution. He regarded the Kabul airport as the air gate of internationalistic friendship.

/9274
CSO: 4600/77

NETHERLANDS OFFERS TO SHARE TELECOM EXPERTISE

Madras THE HINDU in English 5 Nov 86 p 7

[Article by G. K. Reddy]

[Text]

NEW DELHI, Nov. 4.

The Netherlands, a pioneer in the field of tele-communications, has offered to combine sale of equipment and licensed production with co-operation in common research activities, exchange of technologies and shared training facilities to enable India to achieve greater self-reliance in this highly sophisticated sphere.

The Dutch Minister for Education and Science, Mr. Wim Deetman, who is heading a seven-member delegation, has had very fruitful discussions with the Minister for Communications, Mr. Arjun Singh, on how best the two countries could cooperate in pooling their skills and resources.

Specific project proposals: It was agreed that the Netherlands authorities would formulate specific project proposals for consideration by the Government of India so that the two sides could evolve an appropriate framework under the aegis of a joint committee entrusted with the responsibility of fostering this bilateral cooperation. A steering group is being set up to monitor the progress of agreed projects and report to the joint committee.

There are many Indian companies which are keen to collaborate with Dutch firms in electronics, computers and office automation, besides telecommunications. The Dutch delegation is visiting Bombay, Bangalore and Madras to discuss the prospects with interested Indian enterprises for such cooperation, after concluding its talks in Delhi.

/9274
CSO: 5550/0037

NETEOROLOGICAL SERVICES AIDED BY SATELLITE

Madras THE HINDU in English 12 Nov 86 p 19

[Text]

India is making use of space technology for accurate forecasting of weather, to predict floods and droughts and measure the snow melt in the Himalayas.

The geostationary satellite INSAT-IB, launched in August 1983, is now continuously monitoring the atmospheric flow over the whole monsoon area. It provides visible and infrared cloud pictures for the area every half an hour. Wind speeds are calculated from cloud drifts. Besides, the satellite provides information on sea surface temperature.

INSAT-IB is being used for dissemination of warnings against approaching cyclones directly to the coastal areas likely to be affected. Such a system, called Disaster Warning System (DWS), has proved more reliable and efficient for timely receipt of warnings.

The meteorological component of INSAT-IB consists of a two channel very high resolution radiometer (VHRR) with a data relay transponder for broadcast of meteorological data. In the visible channel the resolution is 2.75 km while it is 11 km in the infrared (IR). Since the satellite is in a geostationary orbit, the same area is viewed always, which helps in monitoring the movement of cloud system associated with different weather phenomena.

Ground segment

The meteorological ground segment consists of meteorological data utilisation centre (MDUC) at New Delhi, 20 secondary data utilisation centres (SDUCs) distributed all over the country, 100 land-based automatic, unattended data collection platforms (DCPs) and disaster warning system (DWS). The data from the satellite are received at the earth station located at Sikandarabad, (in Uttar Pradesh) located about 60 km from Delhi. From there the data are sent on a microwave channel to MDUC where the data processed. After processing, the cloud imageries are transmitted by facsimile to SDUCs.

In order to mitigate the disaster caused by cyclones, the most important aspect is to detect and forecast their movement to warn the public in time about the impending cyclone. It is in the detection of the cyclone, right from its formative stage, that the satellite is extremely useful as there is no other means of obtaining conventional observations over the vast areas of the oceans, where they develop. By continuous monitoring of the evolution of the cloud system and their signatures, the movement and on-going intensification can be inferred to issue the warnings.

The intensity of a cyclone at any given time is inferred from a satellite picture, and quantified as a T-number which is determined by studying the cloud features at the centre of the system and the orientation of the clouds surrounding it (called bands). Indian scientists have worked out a relationship between the T-numbers and the maximum winds that would occur in a cyclone. This is an extremely useful tool to the forecaster in determining the likely maximum winds that would occur when the cyclone crosses the coast and helps him to put out suitable warnings. The T-number of the system is disseminated to all the forecasting offices every hour so that the forecaster can update his warnings by using the information in conjunction with the other data available with him.

The INSAT VHRR data are also used to derive the wind speeds by tracking the movements of clouds in the consecutive pictures taken at half-hour intervals. The technique is an automatic one developed by scientists in India. This method of derivation of wind speeds is very useful, especially over the oceanic areas, where there are no conventional methods of observation, and are useful for cyclone-tracking also. These data serve as a useful input to the numerical weather prediction models. These data are being exchanged internationally also. With the advent of satellites, no cyclone goes undetected and this has become an invaluable tool to the weather forecaster.

The cloud winds were measured over the monsoon area during the Monsoon Experiment (MONEX-79) by GOES-10, a satellite located around 60°E at the equator. The cloud winds are very important in describing the atmospheric flow over oceanic areas, where routine meteorological observations are rare. With the

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availability of frequent cloud pictures, it will now be possible to predict more precisely than hitherto the movement and intensity of different rain producing weather systems, particularly the cyclonic storms and depressions.

IMD's services

The Indian Meteorological Department is the principal government agency for providing services to different user agencies in the country in meteorology and seismology. It collects data from over 1,400 observatories of different types, including data collection platforms. The department, along with the Indian Institute of Tropical Meteorology (IITM), Pune, conducts fundamental and applied research in different fields of meteorology, such as, weather forecasting, meteorological instrumentation, radar meteorology, seismology, agricultural meteorology, hydro-meteorology, satellite meteorology and air pollution. The IITM has been conducting cloud seeding experiments for producing rain artificially.

Through its R&D efforts, the IMD has developed improved sensors for basic meteorological instruments for measuring pressure, temperature, humidity and rainfall. Remote sensing instruments have also been developed at the department. With the improved version of radio theodolite/radio sonde developed by the department, more accurate upper-atmospheric data, upto about 30 km, are now routinely available.

The Indian Institute of Astrophysics (IIA), Bangalore, the Indian Institute of Geomagnetism (IIG), Bombay, and the IITM, Pune, are engaged in research programmes relating to monsoon, their onset, withdrawal and variability, cyclones and depressions, their development, movement and decay, statistical and synoptic studies on droughts, numerical and statistical studies of medium and long range forecasting analysis of rainfall data for application in agriculture and water management projects and agricultural meteorology — crop yield forecasting, agroclimatic classification, pests and diseases, water requirement of crop.

The Indian Meteorological Department also conducts agrometeorological advisory services at Chandigarh, Srinagar, Patna, Bhubaneswar, Bombay, Calcutta, New Delhi, Madras and Bhopal. A flood meteorological office has also been established in Agra. A unit for rainfall climatology for agricultural planning has been set up. The IDM also conducts meteorological services for aviation, shipping, ports and fisheries, agriculture (farmer's weather bulletins), special weather bulletins for Himalayan mountaineering expeditions and special weather forecasts for the operations of the Oil and Natural Gas Commission in the Bombay High.

Seismological data collected from the network of seismological observatories are utilised by the department for determining the epicentres and other features of earthquakes. The basic data are also utilised for the assessment of seismic coefficients required for the design of earthquake resistant structures in the seismic areas.

The Meteorological Department is making use of a mix of statistical prediction methods and methods based on the physics of the atmosphere for long range forecasting of rainfall.

The data on onset of monsoon over Kerala is predicted by statistical association between the predictent (the data of onset) with certain antecedent features, which are the predictors. The relationship is expressed by a regression equation. The four main predictors, which are used for this purpose, are: the wind direction over New Delhi in the upper troposphere (300 mb); the upper tropospheric wind direction in southern hemisphere represented by the 200 mb wind direction at Darwin in January; the upper tropospheric features reflected by the dif-

SECOND DIGITAL EXCHANGE OPENED IN DELHI

New Delhi PATRIOT in English 23 Nov 86 p 3

[Text]

Delhi's second digital electronic exchange of 10,000 lines capacity at Shaktinagar was cut into service on Saturday. Briefing newsmen in the Capital, Delhi Telephones General Manager B M Khanna said the digital exchange was to have been commissioned in March '87. At present there were over 31,000 waiting applicants in Shaktinagar exchange.

The exchange has been manufactured by M/s CIT Alcatel of France and the entire equipment for providing high grade junctions to other exchanges have been imported at a cost of Rs 7 crore.

Delhi Telephones, Mr Khanna said, would add 63,000 new exchange lines during 1986-87, out of which 45,000 lines would be digital. The first digital electronic exchange was put into service on 30 June, three months ahead of schedule. Next would be a 15,000 lines digital exchange at Laxminagar and another 10,000 lines at Okhla Exchange to be added during February and March 1987.

In its efforts to improve service, the private sector had been inducted into manufacturing sophisticated receiving equipment with knowhow from Germany, Norway and France, Mr Khanna pointed out.

/9274
CSO: 5550/0039

BRIEFS

ELECTRONICS COMMISSION CHIEF--New Delhi, 8 Nov--Mr P. S. Deodhar, part-time
chairman of the Electronics Trade and Development Corporation, has been ap-
pointed chairman of the reconstituted Electronics Commission. The post had re-
mained vacant since the resignation of Dr M. S. Sanjivi Rao in January this
year. The newly constituted commission will have 10 members and Mr S. R.
Vijayakar, now Secretary to the Department of Electronics, will also function
as vice-chairman of the commission, according to an official announcement.
Other members are Mr S. Venkitaramanan, Finance Secretary; Dr V. S.
Arunachalam, Scientific Adviser to the Defence Minister; Mr D. K. Sangal,
Secretary, Department of Telecommunications; Mr P. R. Latey, Secretary,
Department of Technical Development; Mr U. D. N. Rao, Director, Telecommuni-
cations Research Centre; Dr G. N. Acharya, Director, Central Electronics
Engineering Research Institute (CEERI); Prof A. B. Bhattacharya, Director,
Centre for Applied Research in Electronics (CARE) and Prof H. N. Hahabala,
Department of Computer Science and Engineering, Indian Institute of Technol-
ogy, Madras. [Text] [Madras THE HINDU in English 9 Nov 86 p 12] /9274

TELECOM STRIKE BANNED--New Delhi, 5 Nov--The Government today promulgated
an order under the Essential Services Maintenance Act, prohibiting strikes in
telegraph and telephone services in the country. The order will remain in
force for six months. The executive committee of the 2,000 member Association
of Junior Engineers and Technicians is to meet here on Friday to decide
whether or not to call off their agitation for better pay-scales and promo-
tion prospects. Meanwhile, the association is reported to have assured the
Department of Telecommunications in the presence of the Chief Labour Commis-
sioner, that they would not intensify their agitation in the national inter-
est, in view of the forthcoming meeting of SAARC and also the visit of the
Soviet leader, Mr Gorbachev. The Government has already appointed a committee
headed by a former Communications Secretary, Mr S. M. Agarwal to examine the
demands of the engineers in detail. Our Staff Reporter adds: The West Bengal
branch of the Junior Engineers' Telecommunication Association and the Bharatiya
Telecommunication Technicians' Union in two statements described the order
under the Essential Services Maintenance Act as "unethical" at a time when
the negotiations were going on. The "work-to-rule" movement demanding re-
vision of pay-scales will continue, the statement added. [Text] [Calcutta
THE STATESMAN in English 6 Nov 86 p 1] /9274

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GURKHA MOUTHPIECE--Calcutta, 3 Nov--The Kurseong Radio station has become
"the clandestine mouthpiece" of the Gorkhaland agitation, the CPI MP, Mr
Gurudas Dasgupta, who toured Darjeeling recently, said here today. He al-
leged that the radio station was "meticulously dishing out only those news
items that are helpful to the cause of Gorkhaland." Before leaving for New
Delhi today, Mr Dasgupta said he would lodge a complaint to the Union min-
ister for broadcasting, Mr Ajit Panja, against what he called "the biased
news coverage" of the AIR station. According to him, the station was high-
lighting desertions from other political parties to the GNLF. He also
alleged that it was not covering the harassment of leftist workers by GNLF
activities. [Excerpt] [Calcutta THE TELEGRAPH in English 4 Nov 86 p 4]
/9274

INDIA-UAE CABLE LINK--Bahrain, Oct. 21 (PTI): A two-track sea route survey
for a new 1,964 km submarine telecommunication cable link between the United
Arab Emirates (UAE) and India was completed early this month and work on this
project, jointly undertaken by the Emirates Telecommunications and Bidesh
Sanchar Nigam Limited, has been launched by the survey vessel, Researcher.
The vessel sailed from Bombay to Fujeirah on September 29 and returned to
Bombay on October 2 to complete the route survey. The $75 million cable
project, capable of carrying 1,380 voice grade circuits that would support
telephone, telex, data and facsimile services simultaneously, will be laid
between Fujerirah and Bombay during the second quarter of 1987. For India,
this is the second submarine cable project. The first, linking Madras with
the Malaysian port city of Penang, was commissioned in 1981. The need for
setting up the cable link between the UAE and India was felt because of the
growing business activities between the two countries. [Excerpts] [Calcutta
THE TELEGRAPH in English 22 Oct 86 p 6] /13046

CSO: 5550/0022

AUTOMATIC TELEPHONE PROJECT INAUGURATED

Asadabad Headquarters

Tehran KEYHAN in Persian 23 Sep 86 p 19

[Text] Asadabad and Hamadan, KEYHAN correspondent.

The 2,000-automatic-telephone project of Asadabad was inaugurated and put into operation in a ceremony in the presence of the minister of post, telegraph and telephone.

According to a report by our correspondent, also attending the opening ceremonies of this center were Hojjat ol-Eslam Musavi-Hamadani, the representative of the imam and the Friday imam of Hamadan; Saleh, the governor general; Bahrami, the representative of the people of Asadabad in the Majlis; Hojjat ol-Eslam Hazeh'i, the Friday imam of Asadabad; a large number of officials of the province; and the families of the martyrs.

In these ceremonies, the director general of communications of the province presented a report on the activities of this center, and said concerning the newly built center of Asadabad: This center was built on 1,495 square meters of land, with 648 square meters under construction, and at a cost of 55 million rials. It has 3,000 automatic numbers, of which 2,000 will be put into operation at the present time.

Also, 70 percent of the equipment in this center was procured domestically and the rest from abroad. The center has 12 entry and 12 exit channels. People in other cities can contact Asadabad by using the code 02654. As the ceremonies continued, Gharazi, the minister of post, telegraph and telephone, said in a speech: Before the revolution, we had 900,000 telephone numbers in the country. That number has now doubled, and at the present time, 600 cities and 2,000 villages have telephones.

Also, all the foreign communications employees have been dismissed. The work is being carried out by noble, committed, Iranian employees.

Paveh Headquarters

[Text] Baktaran, KEYHAN correspondent. Engineer Gharazi, the minister of post, telegraph and telephone, and general manager of the Iranian communications company, who traveled to this province yesterday to inaugurate the 3,000-automatic-telephone center of Paveh, introduced Vahedi as the new director general of communications in that province.

Yesterday, simultaneous with the second day of war week, the minister of post, telegraph and telephone, accompanied by a number of the deputies of this ministry; Neku'i, the governor general of Bakhtaran; the director general of post; the director general of communications of the province; the representative of the people of Urumanat and Paveh to the Majlis; and some of the local officials arrived in Paveh. The 3,000-telephone center of this city was then inaugurated and put into operation.

Also, the minister of post, telegraph and telephone, who had traveled to Hamadan to inaugurate the 3,000-telephone center of Asadabad, announced in an interview with the central news unit:

Soon, 90 villages will have telephone communication for the first time in the country through the satellite.

Explaining the implementation of the satellite project in the country, he said: The satellite system is important, because we will be able to establish telephone communications with very distant villages, which is significant in economic, security and political terms. Gharazi also said: The implementation of this project is being completed and in the not-too-distant future, satellite communication will begin in the country.

Field Telephone Line Production Becomes Operational

[Text] Political service. On the sixth day of war week honoring the sacred defense, this morning, during ceremonies in the presence of the ministers of defense and post, telegraph and telephone, for the first time, the field telephone production lines were put into operation in the building of the Iranian communications industries, affiliated with the defense industries organization.

According to a report by our correspondent, quoting the public relations office of the Ministry of Defense, in the opening ceremonies for the telephone line, which were also attended by the deputies, clerics, and a number of officials of the Ministry of Defense and the defense industries organization, Engineer Riazi, the director of the Iranian communications industries, provided explanations about the production of this telephone line and said:

This equipment is fully electronic and is presently for use by the military, law enforcement forces, and related organizations.

He added: These telephones are more useful than the previous ones, which were manufactured abroad, and in manufacturing costs, we have made a 30 percent currency savings. We intend to reduce such expenditures in the future.

In regards to the use of field telephones, the director of the communications industries said: At the present, the communications system is used by the Islamic combatants in the operational areas.

Concerning other projects of this industry, he said: Along with military production, in the area of nonmilitary communication, which has commercial potential and is needed by the country, certain steps have also been taken, which include the "paging system." The way this system works is that individuals can contact from their home the persons they want in any part of Tehran. In addition, we have the mobile telephone production system. Once it is installed, telephone communication can be established in various centers within the city limits and on the roads, which is another project of the Iranian communications industry. According to this report, Colonel Jalali, the minister of defense, also spoke on the success of the military industries.

10,000
CSO: 5500/4705

ATU OFFICIAL QUOTED ON ARABSAT

JN051617 Amman AL-DUSTUR in Arabic 4 Dec 86 p 8

[Article by Tawfiq 'Abid]

[Excerpt] 'Abd al-Jabbar Khalaf, secretary general of the Arabic Telecommunications Union [ATU], said the communications being held through Arabsat are few compared with the capacity of the telephone channels and other channels and other services provided by Arabsat. He attributed this to the fact that some Arabic countries have not yet completed the construction of the ground stations, and to the fact that available channels are not being utilized in a satisfactory manner.

In an interview with AL-DUSTUR, Khalaf said the optimum use of Arabsat will be discussed at the ATU's seventh executive conference scheduled to be held in Amman on 6 December with the participation of representatives of 15 Arabic organizations.

Khalaf added that Arab states that do not have ground stations enabling them to use Arabsat can go through neighboring countries for their communications without having to resort to a "foreign medium." He said the ATU executive conference will discuss ATU plans for 1987, which include the construction of a cable linking the Arab Maghreb with the Arab East and will complement the satellite network created by Arabsat.

The ATU secretary general said Arabsat makes direct satellite communications possible. He asserted there is a great need to establish a ground or maritime network that links the Arab Maghreb with the Arab East. There are several options for the capacity and route of the proposed cable, whose estimated cost ranges from $240 million.

/9599
CSO: 5500/4505

BRIEFS

SATELLITE COOPERATION WITH INDIA--Our country and India signed a memorandum of understanding in New Delhi yesterday on bilateral cooperation in the sphere of satellites and telecommunications. Communications and Transport Minister Ahmad Muhammad al-Ansi signed the memorandum for our country while Indian Communications Minister Arjun Singh signed for his country. The two sides also stressed the importance of promoting bilateral cooperation in the sphere of technical and vocational training. [Text] [Sanaa Domestic Service in Arabic 1700 GMT 2 Dec 86 JN]   /6091

CSO: 5500/4504

RURAL RADIO STATION, MICROWAVE LINK TO BE LAUNCHED

AB022158 Accra Domestic Service in English 2000 GMT 2 Dec 86

[From Ghana newsreel]

[Text] All is set for tomorrow's commissioning of three projects in Bolagatanga. The projects will considerably improve the telecommunications network between the south and the upper region of Ghana. Correspondent Justice Abeng has this preview:

[Begin Abeng recording] The projects are the upper region agricultural radio station, URA Radio, the color television transmitter in Bolgatanga, and the microwave link of the Posts and Telecommunications Corporation. To ensure that the commissioning is as flawless as possible, a team of engineers, technicians, and program men led by the director general of the GBC [Ghana Broadcasting Corporation], Fifi Hesse, has been in Bolgatanga to help in the final preparations for the function. The URA radio program started in 1978 and was financed by the World Bank and the Overseas Development Agency in Britain. The station covers a radius of 50 miles and has a 5 kilowatts frequency modulation transmitter serving the upper east and upper west regions. Sixty percent of the programs on URA radio will come from Radio 1 on the national network while local programs in Grunshie, Kusasi, Dagarti will take the remaining 40 percent. However, when the station goes into full operation, five languages on the national network will be added to the existing three. The station may cover part of the northern region, Burkina Faso, Togo and Cote d'Ivoire. The other two projects—were financed by the Overseas Economic Cooperation fund of Japan. The microwave link will carry telephone communications, radio, and TV signals from the south to the north. And with the commissioning of the microwave project, TV programs will now be transmitted from Accra direct to the north. [end recording]

/12232
CSO: 5500/26

BRIEFS

MICROWAVE SYSTEM COMMISSIONED--A microwave telecommunications system has been commissioned in Ibadan by the International Institute for Tropical Agriculture. The chairman of the board of trustees of the institute, Mr John Mackelberg, said the installation of the equipment would lessen the communications problems of the institute with its out-stations. He also said that with the equipment, it will be possible to reach the remaining 13 research institutes in different parts of the world. [Text] [Lagos Domestic Service in English 0600 GMT 1 Dec 86] /12232

SWEDEN WINS NNPC COMMUNICATIONS CONTRACT--A private telecommunications network will be delivered to the Nigerian National Pertroleum Company (NNPC), under a contract recently signed with Ericsson and Skanska. Worth some Kr.600 million ($86,000,000), the order value is divided evenly between the two Swedish companies. The network will be installed along a 900-km pipeline running from Lagos to Benin and from Warri to Kaduna. [Text] [Lagos BUSINESS TIMES in English 27 Oct 86 p 5] /13104

RADIO KWARA RECEIVES NEW TRANSMITTERS--Four transmitters to serve as booster stations for the Kwara State Broadcasting Corp. have been delivered in Ilorin. The 10-kilowatt transmitters, valued at 1.4 million naira, will be installed in three locations in the state--(Ogbe, Otito, and Okiji). Speaking while taking delivery of the equipment today, the corporation's chairman, Alhaji (Dori Suleyman), said the transmitters would aid better reception throughout the state. He commended the Federal Radio Corp. of Nigeria for accepting to be the clearing agent of Radio Kwara to reduce costs. [Text] [Lagos Domestic Service in English 2100 GMT 24 Nov 86] /9599

CSO: 5500/24

TELECOMMUNICATIONS PROGRESS, AUTOMATIC PHONE SERVICE REPORTED

Dakar LE SOLEIL in French 22 Oct 86 p 3

[Article by Marx Magamou Mbaye: "Telephone Automation at Diourbel: Success"]

[Excerpts] The ceremony inaugurating the beginning of automatic telephone service in the Diourbel region was held last Monday, led by the minister for communications, Djibo Ka. Accompanied by his principal collaborators, Alasane Dialy Ndlaye, director general of SONATEL, and Souleymane Mbaye, director for technical operations, Mr Ka was greeted at the gates of Diourbel by the region's governor, Ibrahima Sall, and by the prefect of Mbacke. Many other political, religious, and civilian personalities were also present.

Decisive Step

Asked for his opinion on the automation of the Diourbel region, Mr Ka stated: "I believe that we have come very far. The older equipment that we saw this morning at Touba, dates back to 1934. This equipment is no longer manufactured; no spare parts are available. It was simply a miracle that we could communicate. Today, we will have a 960-channel Diourbel-Thies-Kaolack radio beam capable of carrying a TV video signal. We will also have a 120-channel beam between Diourbel and Touba-Mbacke; an automatic switchboard at Touba-Mbacke with 600 subscribers, expandable to 1000; a crossbar Pentaconta automatic switchboard at Diourbel with a capacity of 1000 subscribers, expandable to 5000; and an automatic switchboard at Bambey with 200 lines, expandable to 1000 subscribers. We will thus have a total capacity of 3500 distributed pairs (for a 400 percent growth). All of this has required a total 4.5 billion investment (financed by the Central Savings Bank for Economic Cooperation--CCCE, and by the former OPT, which was bought by SONATEL). I take this opportunity to thank CCCE on behalf of the Senegalese government.

Discussing the present condition of the other projects, Mr Ka pointed out that this is the first project completed according to the schedule drawn by president Abdou Diouf as part of the plan for Senegal's telecommunications development plan which he defined on 1 September 1983.

He also added that "we will go further because all the other projects are completed. The largest one, the Grand-Dakar project (more than 16 billion CFA francs) is in its active phase. The South project will also imminently enter its construction phase. There is no doubt that with the head of the government, our country is vigorously engaged in developing its telecommunications.

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CSO: 5500/2

SABC INAUGURATES NEW TELEVISION TRANSMITTER

MB260934 Johannesburg SAPA in English 0921 GMT 26 Nov 86

[Text]   Johannesburg, Nov 26, SAPA--The Hex River transmitting station of the SABC will become part of the SABC television network tomorrow.

The SABC announced today that a television transmitter (10 watts output) "will then commence broadcasting TV1." "The transmission will be on Channel 23 and vertically polarised. UHF receiving antennas, colour-coded red or white, will be required to give better results," the SABC said. The service area includes Hex River and the valley.

"The first month of operation will be considered as a test period during which transmissions may be interrupted without warning or apology to carry out necessary adjustments or repairs. UHF radio waves behave in much the same way as those in the VHF bands, but are more easily interrupted by obstacles, such as hills, and may also be reflected by quite small objects causing ghost images," the SABC said. Where possible, the use of set-top antennas should be avoided. "Better reception is always possible with an antenna which is correctly installed outdoors," it said.

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CSO: 5500/27

BRIEFS

NORWAY FIRM WINS TELECOMMUNICATIONS CONTRACT--A 30-million rand contract for the construction of the SADCC's telecommunications and microwave project has been awarded to a Norwegian firm. The contract, whose purpose is to improve telecommunications service in the participating countries, was signed in Harare. Malawi, Zimbabwe, and Mozambique are the contracting parties in the project. [Text] [Johannesburg Domestic Service in Afrikaans 1400 GMT 2 Dec 86] /9599

CSO: 5500/29

TELEVISION INTERVIEW WITH PRIME MINISTER CHIRAC

LD011422 Paris Television Service in French 1828 GMT 30 Nov 86

[Interview with Prime Minister Jacques Chirac on "Questions at Home" program by unidentified journalists in Paris on 30 November--live]

[Excerpts]

[Question] Now what about the future? Lots of different dates have been mentioned. In your opinion when will the new broadcasting set-up finally be organized, and when can we think TF-1 will be privatized, and, if the case should arise, will new heads of the existing public channels be appointed?

[Chirac] You must ask the CNCL [National Commission for Communications and Freedoms]. It is in charge of this matter. There was a desire to cut the cord which existed between the government, the authorities and the media. A first step in this direction was taken with the creation of the High Broadcasting Authority, which, in the end achieved fairly positive results. We have made another important step by creating the National Commission which I inaugurated recently, and which is entirely independent and has considerable powers — it must take its responsibilities. [passage omitted]

[Question] [Passage omitted] A precise question, with regard to the privatisation of TF-1. Can you say, of the future owner of TF-1 that people will in no way be able to say he is a friend of those in power? And I will specify my question, as everyone is thinking of Robert Hersant. It is being said — and you can perhaps confirm it to us or deny it — that he would be your candidate: Do you think Robert Hersant is the very person of whom we could say he is completely independent from the political powers that be?

[Chirac] May the best one — there will certainly be several candidates for taking over TF-1, the commission will express its feelings — may the best man win. And I can tell you that I support no one.

[Question] And as soon as possible — will this be done as soon as possible?

[Chirac] Under the usual conditions. This must be at the same time as for the fifth television channel, because if there was a difference in timing, this could mean for whoever comes after that there would be a definite handicap, particularly with regard to the personalities recruited to present the programs.

[Question] So, in any case, you want whoever takes over to be as independent as possible from the political powers that be?
[Chirac] I have no opinion on this question. I want him to be the most competent individual possible to run a private channel in a reasonable and commercial way.

BRIEFS

TELECOMMUNICATIONS CENTER--Today, brother Mostefa Benzaza, minister of posts and telecommunications, who is currently paying an official visit to Malta, was received in Valletta by the Maltese prime minister. During the meeting, which was attended by the ambassadors of the two countries, they talked about the means of bolstering the friendship and cooperation bilateral ties and about the international issues of mutual interest. Within the framework of his visit to Malta, Brother Mostefa Benzaza inaugurated the telecommunications ground station in Valletta which was presented by Algeria to Malta. [Excerpt] [Algiers Domestic Service in Arabic 1900 GMT 15 Dec 86 LD] /6662

CSO: 5500/2439

TELEFONICA HEAD DISCUSSES CGE-ITT MERGER

Madrid MERCADO in Spanish 7 Nov 86 pp 8-10

[Interview with Luis Solana, head of Compania Telefonica Nacional de Espana [CTNE]: "We Will Continue Being an Engine"; by Casimiro Garcia-Abadillo; place and date not given]

[Text] [Question] What is the status of talks with the French company CGE as regards Telefonica's joining the Eurotel holding company?

[Answer] We signed a tentative agreement, when Mr Peberau was president of CGE, in which we indicated our interest in participating in a major European consortium. We knew this would mean a major outlay of funds on our part, but we felt that it would be worthwhile. However, Peberau's vacating of the presidency of CGE produced a change in France. A change of attitude. The project is no longer as European as it was initially. Perhaps it is more realistic and less heraldic, more run-of-the-mill. For Spain and for Telefonica, an outlay for a project that is not utopian, not European, lacks interest. We have made very clear our conditions for joining the project. The first is that the project must be viable; secondly, it must be a European project; thirdly, the modernization of Standard and Marconi must be fully resolved within the terms of reference of our incorporation. The fourth condition is that Telefonica must be treated differently than it would be as a mere financial partner. These conditions are not being adequately addressed at this point in time; consequently, our position today is one of waiting, to see if CGE-ITT accords a reasonable response to our demands.

[Question] Have talks been broken off?

[Answer] Talks are continuing. There are two working groups. One group is in Madrid to address the futures of Standard and Marconi; the other is in Paris to address the future of Eurotel. The two groups are continuing to meet and I have not given up yet as to their finding a solution. But I must admit that at this particular time the situation is not very optimistic.

[Question] If you had to bet, would you say there will not be an agreement?

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[Answer] As a businessman, I no longer make bets...

[Question] Well, can we say what is the most probable...?

[Answer] I prefer to talk about the most desirable. And the most desirable would be the creation of a large-scale European telecommunications project astride CGE and ITT.

[Question] What is the Government's position in this matter?

[Answer] The Government is taking a very intelligent position. First, it is saying that this is a Telefonica problem; but at the same time it is saying, through the Ministry of Economy, that where such a large sum of money is involved, the game must be played prudently. And through the Ministry of Industry, it is emphasizing that a far-reaching industrial defining of Spain is also at stake. I think it would be very difficult to recall a moment in which the Government and Telefonica were more in agreement as to the strategies to be followed.

[Question] Is Telefonica currently negotiating with other firms as a possible alternative to the CGE-ITT project?

[Answer] Well, it must not be forgotten that 80 percent of Standard is owned by ITT, hence its future is tied to what CGE-ITT does. It would not be realistic to think in terms of a Telefonica solution to this problem. It goes without saying that our desire is to see the CGE-ITT project succeed, even if we are not a part of it. Certainly, we have offers from different multinationals interested in the Spanish market. But offers on Standard will have to be made to CGE-ITT as the majority shareholder.

[Question] What is Spanish industry's stake in this operation?

[Answer] Fundamentally, what has led us to become interested in this operation is the fact that Spain, unlike the major European countries, has never had a telecommunications industry of its own. This was an opportunity, even though as the lion's tail, if you will, to become part of a European industry in which we would have some say.

[Question] Don't you think the Government, generally speaking, has abandoned the possibility of powering our own technological development and is opting for the easier path of attracting multinationals to do that for us?

[Answer] Spain still suffers from a few complexes. It must be admitted that we still have a lot to learn. We must acquire know-how. If we have know-how, I am convinced that in a very few years there will be a Spanish technology. If we think we can do it alone, we will fail. Initiatives undertaken entirely on the basis of one's own self-sufficiency almost always result suicidal. Thus, the major challenge confronting Spain is learning know-how.

If I can get AT&T to teach 100 Spanish engineers how to make chips, it is an asset that no one can then take away from me. The worst thing we could do would be to agree to be nothing more than a workshop.

[Question] According to your viewpoint, then, the position of Spanish firms would have to be solely that of recipients of technology purchased abroad...

[Answer] Not exactly. Telefonica's experience points to two strategic approaches for Spanish industry: First, import technology to acquire know-how; and secondly, export medium technology. Spain can be the major translator of state-of-the-art technology for certain countries in areas like Latin America or North Africa. Our experience in that regard is very positive. We are cut out for the role of multinational. And we are demonstrating, with the TESYS, for example, that we can export technology, even to advanced countries like Canada. In Puerto Rico we have installed a factory of something as simple as repairing telephones but which, in the first year, has already enabled us to recover our entire investment. Presently, we are engaged in talks with Argentina and Venezuela for the installation of factories specializing in rural telephony, and for the manufacture of modems and of cards for digital exchanges. I believe this should serve as a stimulus to many other Spanish firms.

[Question] But doesn't that aggressive strategy you are propounding appear to you to conflict with Telefonica's policy of selling its industrial holdings?

[Answer] Telefonica intends to continue being an industrial engine; what it doesn't want to be is a mere strapped-down holding company. Our company has played a very important role in attracting multinationals to Spain; but then it has remained at a standstill. It has failed to create firms, attract technology and then sell, to obtain funds for the creating of new firms. Telefonica must become a holding company on the move. In our most recent reorganizations we have created a technological and industrial development department to find out what we can do worldwide. We have formed a company in the United States not only to sell our products there, but also to procure American technology.

[Question] What plusses do you hope to obtain from the sale of those holdings?

[Annswer] It's hard to say at this moment, but I believe that this year we may well realize 5,000 million pesetas from the sale of our holdings in INTELSA and Cables de Comunicaciones and four other small companies. Next year we plan to sell our holdings in Telettra, Cosesa and others. I estimate that in 1987 we will be able to count on having, without touching our rates or operations balance sheet, some 10,000 million pesetas for the creating of new firms.

[Question] Don't you think that in the negotiation with AT&T too much weight
was given to political issues while neglecting important questions such as
the technology transfer involved and the amount of funds Spain would have to
lay out for access to that technology?

[Answer] I continue to believe that the most important operation that has
been carried out in the last 4 years, with regard to the reindustrializing
Spain, has been ATT Microelectronica--from the standpoints of the level of
technology to which we have gained access, the training potential we have
acquired, and the investment-versus-returns ratio. Consider, for example,
that this firm, at this very moment, has already received orders from Philips
and Siemens, because only ATT Microelectronica Espana can sell them
1.7-micron chips. In my view, this is confirmation that the project was
worthwhile.

[Question] However, it is having problems of understanding with Fujitsu...

[Answer] These problems are typical with regard to Japanese firms. They do
not proceed at the same pace as American or European firms. If I had to find
some fault with Fujitsu, I'd say that it has not fully identified with the
enormous urgency for Telefonica, at this time, of resolving the challenge
confronting Spain in regard to electronics.

[Question] Can the president of Fujitsu change course in the very near
future?

[Answer] Of course, he can. He not only can but must change. Everyone has
understood that a general manager of Telefonica has too many other things to
do to be devoting his attention to Fujitsu Espana.

[Question] Telefonica is a firm that, this year, may generate a cash flow
of 175,000 million pesetas. How will this vast generation of funds be
applied?

[Answer] It's true that we generate a large cash flow, although not as large
as we would like. I have one thing to say in this respect. We have an
agreement with the state that makes it very difficult for us to build re-
serves. I think that one of the major issues we are going to have to debate
with the state--next year, I hope, following the promulgation of the LOT--
will be the Telefonica funding policy. This company should have more leeway
with regard to reinvesting its own funds, and this is going to require some
changes in our present charter. We should be able to reach an agreement with
the state such that, if Telefonica is able to generate surpluses, through its
operations, these surpluses can be transferred to reserves instead of being
automatically converted into rate reductions.

[Question] What, in your view, has been the net result of Telefonica's ex-
cursions into credit markets abroad?

[Answer] Enormously positive. Because they have disciplined our management and operations and have opened up new sources of funds. We are like a huge sponge. Over the next 4 years we are going to invest more than 1 billion [1 million million] pesetas, and figures of this magnitude cannot be supported by Spanish credit sources alone.

[Question] Are you still as upbeat about being president of Telefonica as you were 4 years ago?

[Answer] I would have to look long and hard to find another job about which I could be more enthusiastic than I am about being president of Telefonica.

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CSO: 5500/2427

SPANISH PARTICIPATION IN EUTELSAT REPORTEDLY ENDANGERED

Madrid EL PAIS in Spanish 6 Nov 86 p 30

[Article by Jose F. Beaumont]

[Text] The differences which have arisen between Telefonica and the
government are endangering Spain's full participation in the new communica-
tions satellites to be launched by EUTELSAT [European Telecommunications
Satellite Organization] starting in 1989. These satellites will each offer
a 16-television channel capability, plus other data transmission, telephone,
and business services. They will provide Europe's greatest television by
satellite potential during the 1990s.

The ministry of transportation, tourism and communications has for the time
being frozen the specific plans for leasing several transponders (used for
signal transmission on the satellite) on the four EUTELSAT satellites which
the telephone company had presented for its approval at the latest meeting
of the company's board of directors, held on Wednesday, 29 October.

Telefonica had received a specific request from EUTELSAT, as had the rest
of the European PTTs [Postal and Telecommunications Services], the national
telecommunications monopolies, asking that it inform EUTELSAT as soon as
possible of the number of channels it will need, in order that EUTELSAT
may plan the distribution of the new satellites.

The step taken by the ministry of transportation was interpreted by
semi-official sources "not as a veto of the satellite utilization policy,
but rather as one more attempt to make decisions which lie within the com-
petence of the ministry in the telecommunications field." "It is the go-
vernment's responsibility to take the initiative; it is not going to allow
Telefonica to move ahead on the satellite issue, for this is a matter still
being discussed within the executive branch," these sources added, which re-
jected "any implications of the decisions on EUTELSAT satellites with pri-
vate television."

EUTELSAT's insistent request that Spain make its decision known about its
communications satellite needs for the 1990s is now caught in the center of

this dispute between the executive branch and Telefonica. Telefonica is the signatory party representing Spain with both EUTELSAT and INTELSAT [International Telecommunications Satellite Organization].

Urgency

"We have emphasized to Telefonica," said a EUTELSAT director in Paris, "that they must spell out their needs and requests in order to prepare the operational configuration of the system starting in 1989. There is a great demand in most of the European countries, and the first applications we receive will get the transponder. So it is important that either Telefonica or the government respond as soon as possible."

According to the EUTELSAT director, transponder reservations are made through Telefonica, but the final user may be a party designated by the future telecommunications reorganization law.

Official sources from Telefonica stated they did not know the government's decision, but they indicated that this could seriously affect the company "in its planning."

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